

## **APPENDIX E**

**CONCEPTUAL SITE MODEL**  
**Former Commonwealth Aluminum Facility**  
2211 through 2307 East Carson Street,  
Carson, California

A conceptual site model (CSM) has been prepared for the former Commonwealth Aluminum (also known as Carson Aleris) facility located at 2211 through 2307 East Carson Street, Carson, Los Angeles County, California (Site, Figures 1 and 2). The CSM describes Site conditions, summarizes potential contaminants and source areas, and describes potential receptors and pathways. The CSM includes a potential sources/release mechanism/pathway/exposure route/receptor flow chart (Figure 3), a cross-section with soil lithology and detected concentrations of total petroleum hydrocarbons (Figures 2 and 4), and the same cross-section that includes potential source features (Figures 2 and 5). Figures 2a and 5 also show the extent of proposed soil remediation excavations.

**Site Setting**

- **Historical Usage:** Aluminum scrap recycling and rolling operations were conducted at the Site until March 31, 2006. The Site was acquired by ProLogis Exchange CA (7) LLC (ProLogis) on December 11, 2006.
- **Proposed Redevelopment:** ProLogis intends to redevelop the Site by removing the existing structures and building a distribution warehouse facility and repave the existing parking areas.
- **Size:** The Site covers an area of approximately 22 acres and is located in a mixed commercial and industrial area.
- **Zoning/Vicinity:** The Site is located in an area designated by the City of Carson General Plan as Heavy Industrial. Surrounding uses include warehouse, manufacturing and office buildings. NYK Logistics Distribution Center is located to the north and east of the Site. A business park is located to the west and warehouse/distribution facilities are located to the south, across East Carson Street.
- **Climate:** The City of Carson experiences a mild, dry, climate with an average annual minimum temperature of 54 degrees Fahrenheit (°F) and an average annual maximum temperature of 72 °F. Average monthly precipitation is approximately 1.23 inches. Average annual precipitation is approximately 14.79 inches.

- **Surface Water:** The nearest natural body of surface water is the Dominguez Channel; a concrete-lined stream located approximately 0.75 miles to the east of the Site.
- **Regional Geology:** The Site is located within the Dominguez Gap physiographic feature of the Los Angeles Coastal Plain. The Dominguez Gap was carved between the Dominguez Hills and Signal Hills by the ancestral Los Angeles River. The Site is underlain at the surface by recent alluvium deposited by the Los Angeles River, and by the upper Pleistocene Lakewood Formation at a depth of about 50 feet below ground surface (bgs) (ERM May 2006).
- **Site Geology:** According to the Solid Waste Assessment Test report prepared for a portion of the Site by Woodward-Clyde (1990), the Site is located in the West Coast Ground-Water Basin, within the Dominguez Gap region of the Los Angeles Basin, a subarea of the Peninsular Range Geomorphic Province of southern California. The West Coast Basin is bounded to the north by the Santa Monica Mountains, to the west by the Pacific Ocean, to the southwest by Palos Verdes Hills, and to the southeast by San Pedro Bay. The West Coast Basin is separated from the adjacent Central Ground-Water Basin to the east by the Newport-Inglewood Fault Zone. This zone is expressed topographically between Newport Beach and Beverly Hills by a series of low hills which include Signal Hill, Dominguez Hill, Baldwin Hills, and Beverly Hills.

The area surrounding the location of the Site is flat to slightly sloping towards the south. Approximate ground surface elevation is 25 feet above msl. The base of the south slope of the Dominguez Hills begins approximately one mile north of the Site, the set bank of the Los Angeles River is approximately 1.4 miles east of the Site, and the east bank of the Dominguez Channel lies approximately 0.8 miles southwest of the Site.

Many subsurface investigations have been conducted at the Site. The subsurface investigation conducted by Park Environmental, Inc. (Park) in April 1992 found the Site to be generally underlain to a depth of approximately 10 feet bgs by silt with several locations noted as having clayey silt and fine sandy silt mixtures. One of many subsequent soil investigations, conducted by ERM (May 2006), confirmed that soils within the upper 10 to 15 feet bgs were found to consist primarily of silt with subordinate amounts of clay and very fine-grained sand. In addition, the ERM investigation indicated that soils below approximately 15 feet bgs consisted predominantly of silty sand.

- **Site Groundwater:** As reported by Park (September 1990) and Brown and Caldwell (January 2006, May 2006), depth to potable groundwater was recorded onsite and offsite at approximately 110 to 160 feet bgs. Previous consultants (Aqua Science 1988) encountered a

perched or semi-perched groundwater condition at a depth of approximately 22 feet bgs. Recent groundwater monitoring reports (PSI, 2007) show groundwater elevations approximately 20 to 25 feet below grade. Woodward-Clyde Consultants (June 1990) interpreted the area to be an assemblage of channel deposits of intermittent hydraulic sand, silt, and clay lenses which would allow groundwater to flow northeastward towards the Los Angeles River. During a soil investigation in May 2006, ERM advanced 46 soil borings throughout the Site to a maximum depth of 26 ft bgs. Groundwater was not encountered in any of the soil borings.

### **Evaluation of Potential Source Areas and Constituents of Concern**

Numerous investigations have been conducted to characterize the Site. Sampling locations from historic sampling events are shown on Figure 2. Based on these investigations, potential source areas and constituents of concern (COCs) have been identified. In light of the proposed Site redevelopment plan, the results of historic Site investigations were compared to environmental screening levels (Iris 2007), and a risk assessment evaluation will be used to develop site-specific screening levels and to evaluate cumulative health risks.

Three areas of concern have been identified:

- Rolling Oil Sumps
- Abandoned In-Place USTs
- Operations inside the Building (primarily petroleum hydrocarbon impacted soil beneath the slab)

The following Table provides a summary of the media and compounds evaluated, and generally impacted at the Site.

<b>Media</b>	<b>Compound</b>	<b>Comments</b>
Soil	Non-Fuel Petroleum Hydrocarbons (rolling oil)	<ul style="list-style-type: none"> <li>Limits of rolling oil are well defined.</li> <li>Rolling oil has low viscosity, is immobile, and does not contain toxic constituents.</li> <li>Rolling oil is degrading.</li> </ul>
	Fuel Petroleum Hydrocarbons	<ul style="list-style-type: none"> <li>Limited areas with residual TPH concentrations above screening levels.</li> </ul>
	Volatile Organic Compounds	<ul style="list-style-type: none"> <li>Concentrations of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene exceed commercial/industrial screening levels at one location.</li> </ul>
	Metals	<ul style="list-style-type: none"> <li>Elevated total metals concentrations (primarily copper, zinc, cadmium, and lead) in northwest corner of Site and in landfill portion of Site. Some soils from northwest corner of Site were excavated, chemically stabilized to reduce leachability and placed under asphalt paving in the landfill portion of the Site. Deed Notification is in place for these areas of the Site.</li> <li>Arsenic concentrations exceed screening levels, but are generally within background levels.</li> </ul>
Soil Vapor	Volatile Organic Compounds	<ul style="list-style-type: none"> <li>Concentrations do not exceed commercial/industrial screening levels.</li> </ul>
	Methane	<ul style="list-style-type: none"> <li>One elevated methane concentration (above LEL) was identified in the area of the rolling oil impacts.</li> </ul>
Groundwater	Non-Fuel Petroleum Hydrocarbons (rolling oil)	<ul style="list-style-type: none"> <li>Rolling oil in the vicinity of a former process sump is present as a light non-aqueous phase liquid (LNAPL), and has been recovered on a monthly basis in wells since 1991.</li> </ul>
	Fuel Petroleum Hydrocarbons	<ul style="list-style-type: none"> <li>No concentrations exceed screening levels.</li> </ul>
	Volatile Organic Compounds	<ul style="list-style-type: none"> <li>Concentrations of a few constituents exceed Maximum Contaminant Levels (MCLs), but are low in concentration, and have displayed steady degradation for more than a decade. A specific source has not been identified in multiple vadose-zone investigations.</li> </ul>
	Metals	<ul style="list-style-type: none"> <li>Concentration at one location exceeds arsenic MCL, but is within background levels.</li> </ul>

### Potential Receptors

Potential receptors at the Site include persons at the Site during redevelopment and post-redevelopment. During the Site redevelopment activities, potential receptors consist of construction workers, nearby off-site residents and recreational users. After Site redevelopment, the potential receptors are commercial workers, including landscape/maintenance workers.

## **Exposure Pathways**

### Soil/Soil Vapor

Although the Site will be paved under the proposed Site redevelopment plan, precluding any potential direct contact with soils for future users of the Site, soil direct contact pathways will conservatively be included in the health risk evaluation to address potential direct exposures during and post-redevelopment. Potential receptors (i.e., onsite construction workers) may come into direct contact with the rolling oil, and other sub-slab hydrocarbon impacts, during excavation activities. In addition to soil direct contact pathways, soil vapor migration is an exposure pathway of concern for both onsite construction workers and future Site occupants. The potentially complete pathways through which workers during and after redevelopment activities may be exposed to chemicals detected in soils at Site include:

- Inhalation of volatiles migrating from soil, up through the soil column, and into indoor/ambient air
- Inhalation of particulates
- Soil ingestion
- Dermal contact with soil

For off-site receptors (i.e., nearby off-site residents and recreational users) during redevelopment activities, the potentially complete pathways through which these receptors may be exposed to chemicals in Site soils include:

- Inhalation of particulates
- Inhalation of volatiles migrating from soil, up through the soil column and into ambient air.

### Groundwater

The first groundwater beneath the Site has been characterized as a perched zone at approximately 25 feet bgs. Dermal contact and ingestion exposure pathways for groundwater are therefore not expected to be complete since direct human contact by commercial workers will not occur. Any subsurface demolition or excavation activities will be conducted using extended arm excavators, and no direct human contact by construction workers will occur. Volatilization of chemicals in the groundwater is considered as a soil vapor exposure pathway.

## **Conceptual Site Model**

### Flow Chart

Figure 3 illustrates potential sources, release mechanisms, pathways, exposure routes, and receptors. Potential receptors are future commercial workers and construction workers, off-site residents, and off-site recreational users during redevelopment. Dermal contact and ingestion of groundwater are potentially incomplete pathways because of its depth beneath the Site and the unlikelihood of its use as a future potable water source for the Site.

### Cross Sections

Using data from the numerous and multi-phased investigations at the Site, a cross-section (as indicated on Figure 2) was generated showing the lithology and location of impacted media at the Site (Figure 4). Figure 5 illustrates the potential source features and release pathways.

## References

Aqua Science Engineers Inc. (Aqua Science). 1988. *Underground Tank Monitoring System and Contamination Assessment Project at Barmet Aluminum Company, 2211 E. Carson Street, Carson, California*. February 10.

Brown and Caldwell. 2006. *Installation of Groundwater Monitoring Well CAR-GSP-6 at 2241 East Carson Street, Carson, CA*. January 9.

Brown and Caldwell. 2006. *Groundwater Monitoring Wells CA-G1, CA-GSP-1 and CA-S1 at 2211 East Carson Street, Carson, CA*. May 22.

Environmental Resources Management (ERM). 2006. *Draft Soil Investigation Report, Commonwealth Aluminum/Concast, Inc. Facility, Carson, California*. June.

Iris Environmental. *Site Remediation and Redevelopment Plan, Former Carson Aleris Facility, 2211 and 2241 East Carson Street, Carson, California*. February 5.

Park Environmental, Inc. (Park). 1990. *Work Plan for Remedial Investigation and Soil Remediation of Subsurface Soils Near Underground Storage Tanks Located at 2211 E. Carson St. Long Beach, CA*. September.

Park. 1991. *Site Assessment Report, Barmet Aluminum Corporation, 2211 E. Carson Street, Carson, California*. October 17.

Park. 1993. *Completion of Additional Vapor Extraction Remediation, Barmet Aluminum Corporation, 2211 E. Carson Street, Carson, California*. June 10.

Park. 1993. *Site Assessment Report for Soils Containing Copper, Lead, Zinc, and Cadmium, Barmet Aluminum Corporation, Carson Facility, 2211 East Carson Street, Carson, California*. August 27.

Park. 1995. *Assessment of Chlorinated Hydrocarbons in Groundwater, Barmet Aluminum Corporation, 2211 E. Carson Street, Carson, California*. June 6.

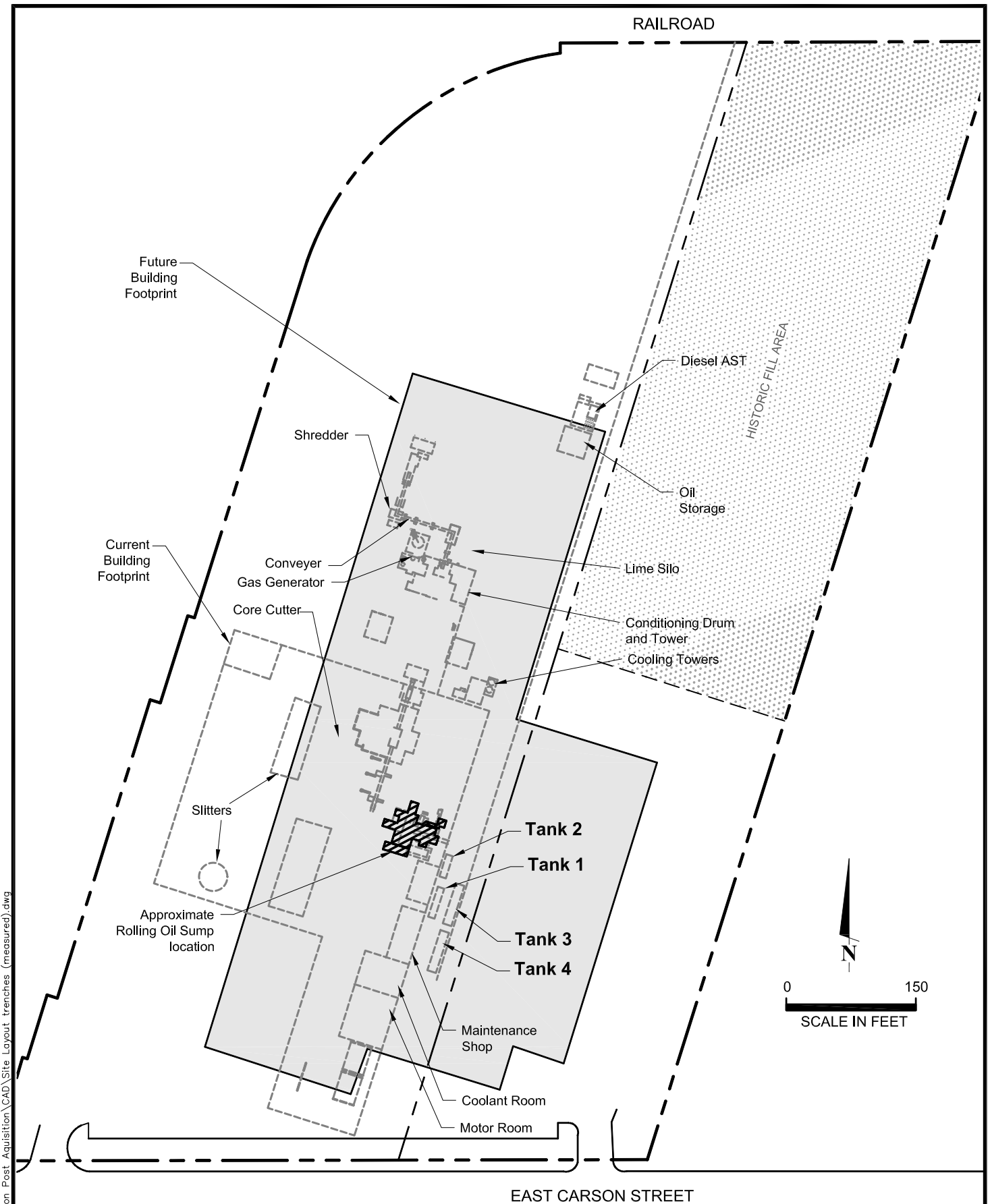
Park. 1996. *Assessment of Chlorinated Hydrocarbons in Groundwater, Barmet Aluminum Corporation, 2211 E. Carson Street, Carson, California*. March 11.

Professional Service Industries (PSI). 2007. *First Semi-Annual Groundwater Monitoring Report 2007, Commonwealth Aluminum Facility, 2211 East Carson Street, Carson, California*. July 7.

Thorne. 1989. *Remedial Investigation Report, Barmet Aluminum, Carson, California*. May,

Woodward-Clyde Consultants (Woodward Clyde). 1990 *Solid Waste Assessment Test (SWAT) Report for the California By-Products Disposal Site*. June.







**Note:**  
Cross Section A-A' shown on Figure 4.

**EXPLANATION:**

- ◆ Existing Monitoring Well location
- ▨ Approximate location of Rolling Oil Sump (Park Oct 1991)
- ◆ Soil sample location (Park August 1993)

- ⊙ Groundwater sample location (Park Feb. 1995)
- △ Soil gas sample location (Park, March 1996)
- ◆ Soil and soil vapor sample location (ERM June 2006)
- ◇ Soil sample location (ERM June 2006)

- Underground Storage Tank sample location
- \* Previous boring advanced prior to any remedial activities
- 1988 Aqua Sciences Engineers (A-\*)
- 1989 Thorne Environmental, Inc. (T-\*)
- 1993 Park Environmental (P-\*)

**IRIS ENVIRONMENTAL**  
1438 Webster Street, Suite 302  
Oakland, California 94612  
Ph. (510) 834-4747 Fax: (510) 834-4199

**Sampling Locations**  
Carson Aleris  
Carson, California

Figure

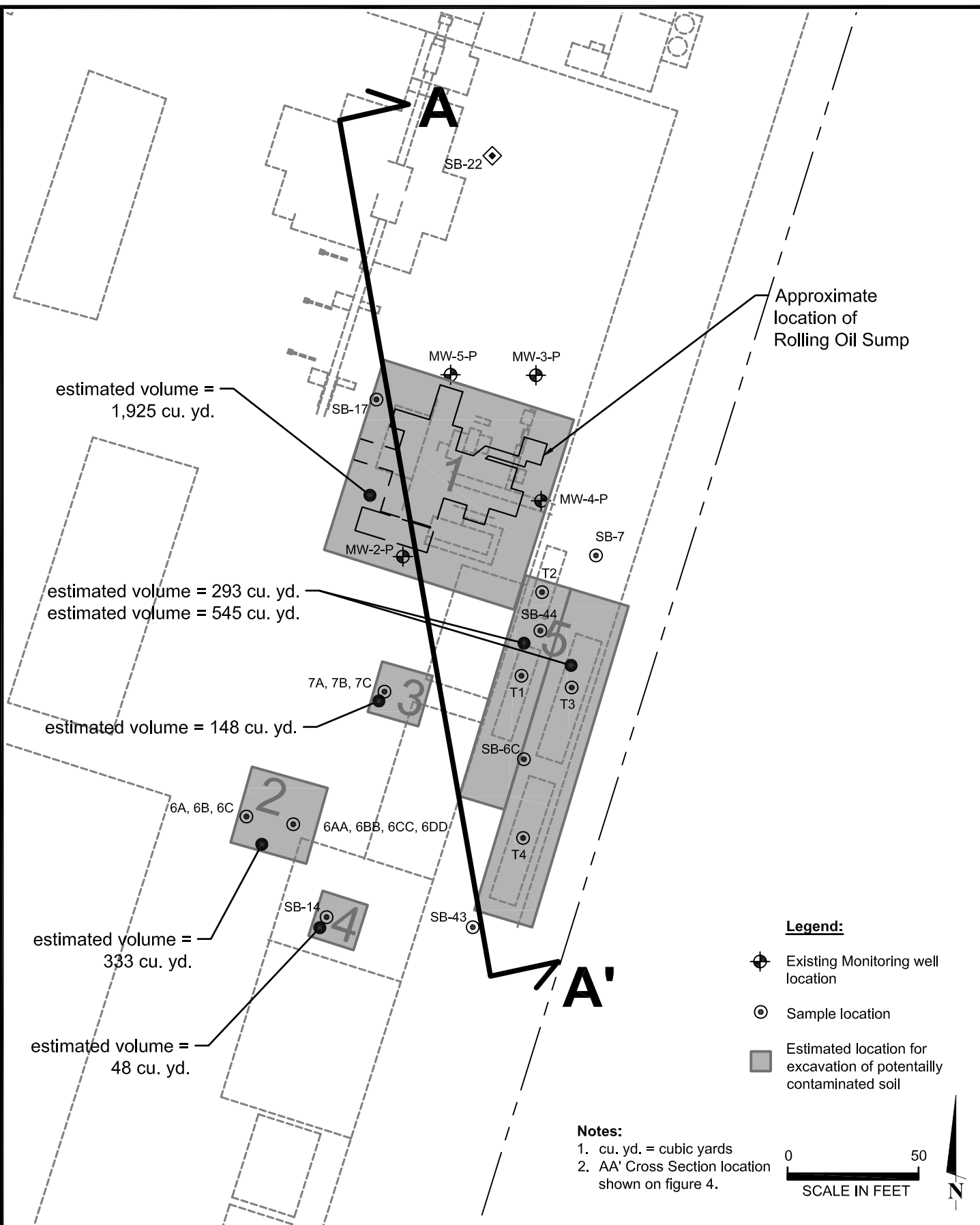
**2**

Drafter: EBH

Date: 9/17/07

Contract Number: 06-467-K

I:\Catellus\06-467-T\CAD\Contamination.dwg

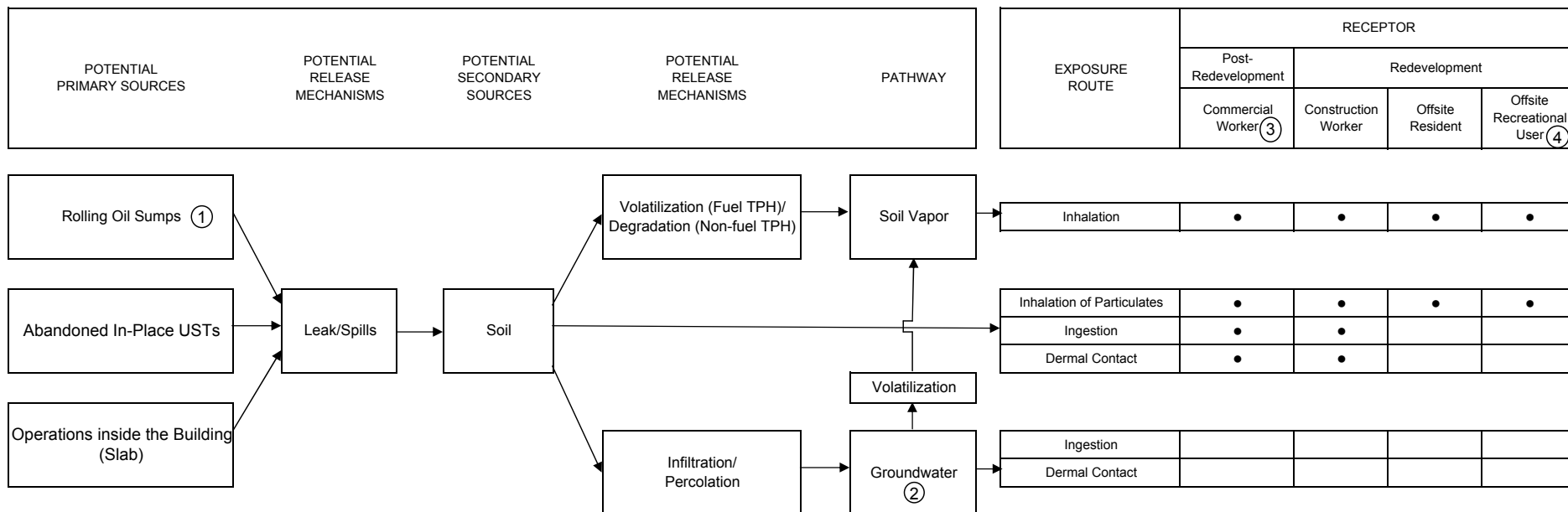


**IRIS ENVIRONMENTAL**  
1438 Webster Street, Suite 302  
Oakland, California 94612  
Ph. (510) 834-4747 Fax: (510) 834-4199

**Estimated Volume for Excavation for Contaminated Soil**  
2211 and 2241 East Carson Street  
Carson, California

Figure

**2a**



**NOTES:**

- ① Rolling oil is not anticipated to complete a soil vapor pathway as it is not likely to volatilize under ambient conditions (i.e., has a low viscosity and high boiling point).
- ② Groundwater dermal contact and ingestion exposure pathways are not expected to be complete because groundwater is present at approximately 25 feet below ground surface such that direct human contact by commercial workers will not occur. Any subsurface demolition or excavation activities will be conducted using extended arm excavators, and, therefore, no direct human contact by construction workers will occur.
- ③ Landscape/maintenance worker considered under commercial worker population.
- ④ Offsite recreational use includes receptor at nearby parks.

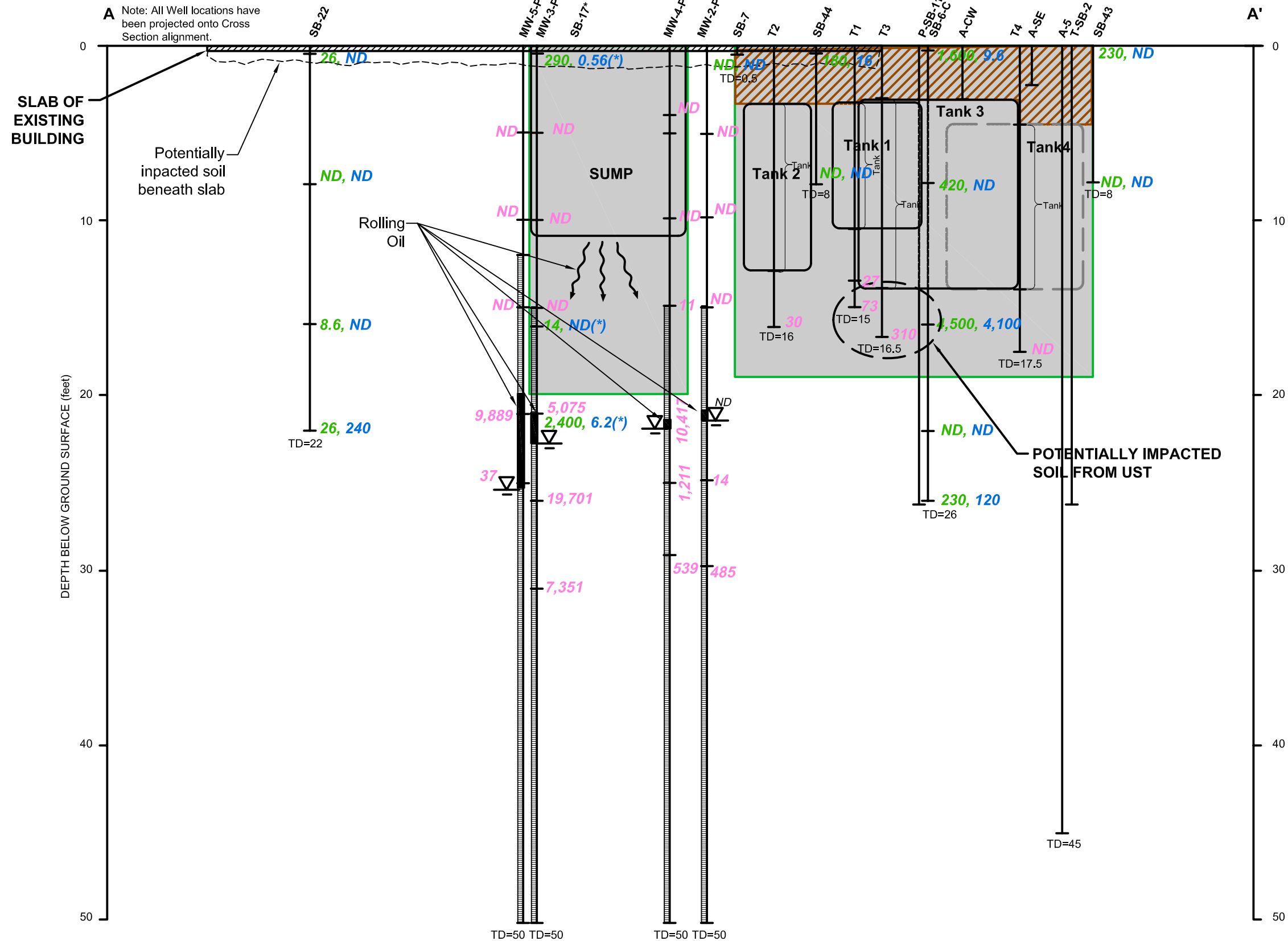
**IRIS ENVIRONMENTAL**  
1438 Webster Street, Suite 302  
Oakland, California

**Conceptual Site Model - Flow Chart**  
2211 and 2241 East Carson Street  
Carson, California

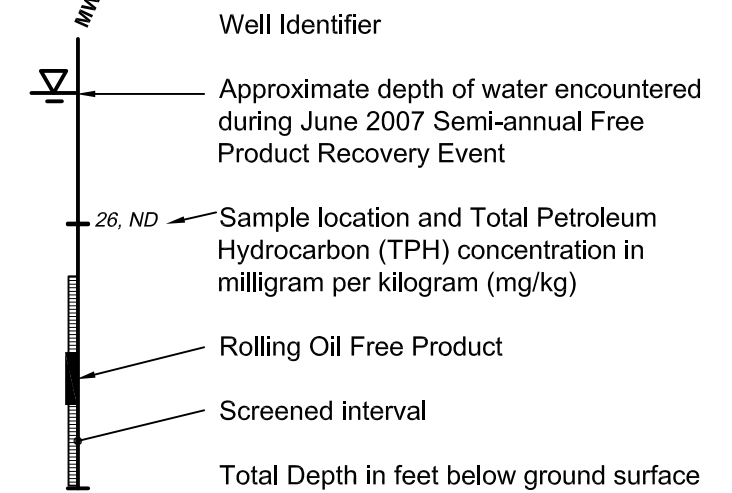
**Figure**  
**3**



i:\Cotellus\06-467-T Carson Demolition Oversight\CAD\Section AA Excavations.dwg



**EXPLANATION:**



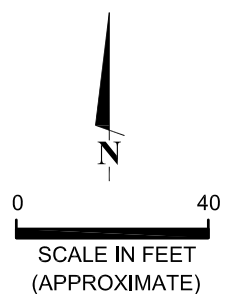
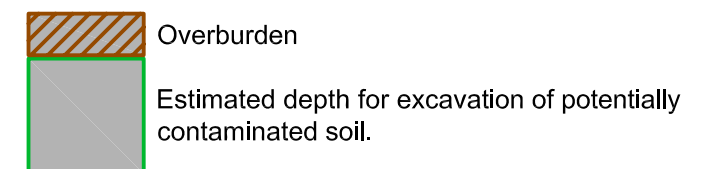
**Total Petroleum Hydrocarbons**

TEPH, TVPH (May 2006)

TRPH (May 1995)

TEPH : Total Extractable Petroleum Hydrocarbons  
TVPH : Total Volatile Petroleum Hydrocarbons  
TRPH : Total Recoverable Petroleum Hydrocarbons

**Note:** (\*)SB-17 is southwest of A-A' and its projection coincides with MW-3-P, (MW-3-P lies northeast of A-A')



**IRIS ENVIRONMENTAL**  
1438 Webster Street, Suite 302  
Oakland, California 94612  
Ph. (510) 834-4747 Fax: (510) 834-4199

**Conceptual Site Model**  
Carson Aleris  
Carson, California

Drafter: EBH

Date: 11/5/07

Figure

**5**

Contract Number: 06-467-T

**SOIL MANAGEMENT PLAN**  
**FORMER COMMONWEALTH ALUMINUM FACILITY**  
**CARSON, CALIFORNIA**

*Prepared for*

ProLogis Exchange CA (7) LLC  
c/o ProLogis  
4041 Mac Arthur, Suite 400  
Newport Beach, California 92660

*Prepared by*

Iris Environmental  
1438 Webster Street, Suite 302  
Oakland, California 94612

November 8, 2007

Job No. 06-467-K

## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2.0</b>	<b>PURPOSE .....</b>	<b>2</b>
<b>3.0</b>	<b>PROGRAM PARTICIPANTS .....</b>	<b>3</b>
3.1	DEVELOPER'S PARTICIPANTS .....	3
3.2	GENERAL CONTRACTOR'S PARTICIPANTS.....	3
<b>4.0</b>	<b>INDIVIDUAL RESPONSIBILITIES .....</b>	<b>4</b>
4.1	INDIVIDUAL RESPONSIBILITIES.....	4
4.1.1	General Contractor.....	4
4.1.2	Developer .....	4
4.2	GENERAL RESPONSIBILITIES.....	4
<b>5.0</b>	<b>VAPOR AND DUST MITIGATION DURING REMEDIATION AND REDEVELOPMENT.....</b>	<b>6</b>
5.1	VAPOR MITIGATION PLAN.....	6
5.1.1	Vapor Mitigation Measures .....	6
5.1.2	Vapor Monitoring .....	6
5.2	DUST MITIGATION .....	7
<b>6.0</b>	<b>AREAS OF CONCERN AND ASSOCIATED CONTAMINANTS .....</b>	<b>8</b>
6.1	UST LOCATIONS .....	8
6.1.1	Closed-in-Place USTs.....	8
6.1.2	Closed-in-Place Sumps .....	8
6.1.3	Big Bliss Cold Mill Process Sump.....	9
6.1.4	Process Sumps Permitted as USTs .....	9
6.2	SOILS UNDERLYING SITE BUILDING SLAB AND PAVED AREAS .	10
6.3	ASBESTOS AND LEAD PAINT .....	10
<b>7.0</b>	<b>GUIDELINES FOR IDENTIFICATION AND ANALYSIS OF EXPECTED AND UNKNOWN ENVIRONMENTAL CONDITIONS .....</b>	<b>11</b>
7.1	IDENTIFICATION AND STOCKPILING OF EXPECTED AND UNKNOWN ENVIRONMENTAL CONDITIONS IN SOILS.....	11
7.2	SAMPLING .....	12
7.3	LABORATORY ANALYSIS .....	12
7.4	ENVIRONMENTAL CONTAMINANT SCREENING LEVELS.....	12
7.5	AGENCY NOTIFICATION.....	13
7.6	CONTAMINATED SOIL DISPOSAL .....	13
7.7	HEALTH AND SAFETY PLAN GUIDELINES.....	13



<b>8.0</b>	<b>REFERENCES.....</b>	<b>14</b>
------------	------------------------	-----------

## **TABLES**

Table 1:	Summary of Relevant Regulatory Screening Levels
----------	---

## **FIGURES**

Figure 1:	Site Layout and Areas of Potential Concern
-----------	--

## **APPENDICES**

Appendix A	South Coast Air Quality Management District Rule 1166
Appendix B	Project Health and Safety Requirements

## **1.0 INTRODUCTION**

This Soil Management Plan (SMP) has been prepared to provide procedures and criteria to guide environmental management during grading operations and subsurface redevelopment activities at the former Commonwealth Aluminum facility located in Carson, California (Site). The SMP is prepared to be in compliance with applicable laws, regulations, and prior environmental closures that are in place at the Site.

The Site was acquired by ProLogis Exchange CA (7) LLC (ProLogis) in December, 2006. The Site is approximately 22 acres in size and is located in an area designated by the City of Carson General Plan as Heavy Industrial. Planned Site redevelopment activities include the demolition of existing structures, construction of a distribution warehouse facility, and repaving of existing parking areas. Shallow (less than 5 ft) excavation and grading will generally be required, with the exception of the excavation and removal of deeper concrete sumps and support structures in limited areas of the Site.

Previous environmental investigations at the Site have included those related to the closure of underground storage tanks (USTs) and sumps, investigation of both fuel and non-fuel petroleum hydrocarbons in soil and groundwater, investigation of volatile organic compounds (VOCs) in soil and groundwater, investigation of metals in certain portions of the Site, asbestos surveys, and lead-based paint surveys. Asbestos and lead paint surveys revealed that these constituents may be present in on-site buildings.

The guidelines presented in this SMP outline contractors', consultants', and developer responsibilities for excavation, monitoring, sampling, laboratory analysis, stockpiling, agency notification, reuse and disposal of impacted soils.

Prior agency interactions regarding environmental issues at the Site have included the Los Angeles County Department of Public Works (LACDPW), the Los Angeles County Fire Department, and the California Regional Water Quality Control Board, Los Angeles Region (RWQCB). As of June 27, 2007, the California Department of Toxic Substances Control (DTSC) is providing regulatory oversight for the Site.

## **2.0 PURPOSE**

The purpose of this SMP is to provide procedures for the excavation of Site soils with known environmental impacts, and to provide a framework in which to properly manage unknown features and environmental conditions if they are encountered during Site grading and development. The SMP also highlights areas of the Site where residual contaminants might be expected, and establishes risk-based screening levels to assess the suitability of on-site reuse of the soil. This SMP also provides procedures for the effective and prompt communication of the discovery of unknown features and environmental conditions to the developer, and to the appropriate agency, if necessary, during Site grading and development. This SMP and the general contractor's Health and Safety Plan (HASP) will also outline the appropriate Health and Safety protocol for managing the discovery of unknown conditions.

### **3.0 PROGRAM PARTICIPANTS**

#### **3.1 DEVELOPER'S PARTICIPANTS**

The Developer's Project Director is:

- Frederick Schumacher, ProLogis

The Developer's Environmental Manager for this project is:

- Bita Tabatabai and Nick Loizeaux, Iris Environmental

#### **3.2 GENERAL CONTRACTOR'S PARTICIPANTS**

The General Contractor's Project Manager is:

- To be determined
- The General Contractor's Project Site Superintendent is:
- To be determined

The General Contractor's Project Site Foreman is:

- To be determined

## **4.0 INDIVIDUAL RESPONSIBILITIES**

### **4.1 INDIVIDUAL RESPONSIBILITIES**

#### **4.1.1 General Contractor**

During remediation, excavation, and grading the general contractor will monitor the disturbed soils for odorous or visibly contaminated/stained soils. If encountered, the general contractor will notify the developer and the environmental manager. The general contractor will isolate the affected soils as described in Section 6.1. The general contractor will also be responsible for compliance with applicable South Coast Air Quality Management District (SCAQMD) regulations regarding dust (Rule 403) and/or vapor control (Rule 1166).

#### **4.1.2 Developer**

The developer has retained an environmental professional to sample and analyze soils suspected of residual chemical impacts. Sampling and analytical guidelines are described in Section 6.2. Using United States Environmental Protection Agency (USEPA) Region IX soil Preliminary Remediation Goals (PRGs) for commercial sites (2004), a summary of which can be found in Table 1, California EPA (CAL/EPA) Human Health Screening Level (CHHSL) commercial / industrial soil screening numbers (2005), or Site-specific soil Risk Based Screening Levels (RBSLs) developed for total petroleum hydrocarbons (TPH), as presented in the Corrective Measures Proposal (CMP) developed for the Site, the developer and the environmental professional can assess the suitability of soils for re-use on-Site. If concentrations exceed these screening levels, the DTSC will be notified and additional samples of the soils exceeding screening levels will be collected by the environmental professional to profile them for off-site disposal purposes. Potential exceptions to this protocol would occur if certain compounds (e.g. arsenic) are present above PRGs, but are within the generally accepted background concentrations for the region. The point of contact at DTSC is listed in Section 6.5. Once waste characterization, transportation, and disposal options have been determined, the developer will sign non-hazardous or hazardous generator manifests required for off-site management of soils.

### **4.2 GENERAL RESPONSIBILITIES**

The general contractor will be required to have a project-specific HASP developed and reviewed by the developer, prior to the start of work that is in general accordance with the overall project Health and Safety requirements presented in Appendix B.

Additionally, the general contractor will be required to provide, or subcontract for, the appropriate on-site monitoring and documentation called for in the approved HASP.

Environmental professionals overseeing sampling, waste characterization, reporting, and agency communications must be appropriately trained, or certified as warranted, for such activities. Suitable certifications include professional engineers, registered geologists, and registered environmental assessors.

## **5.0 VAPOR AND DUST MITIGATION DURING REMEDIATION AND REDEVELOPMENT**

### **5.1 VAPOR MITIGATION PLAN**

A Vapor Mitigation plan will be developed by the remediation or redevelopment contractor for Site remediation and redevelopment activities, as required by SCAQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil (Appendix A). The VOC concentration of excavated soils will be field monitored in accordance with Rule 1166, and the Vapor Mitigation plan will be implemented as required.

#### **5.1.1 Vapor Mitigation Measures**

The following table provides a summary of possible vapor mitigation measures applicable to the excavation of Site soils containing VOCs:

<b>Mitigation Measure</b>	<b>Implementation</b>
Water spray	At all times during soil excavation in potential VOC impacted areas.
Vapor suppressant	If necessary to reduce odors and/or further reduce VOC emissions.
Water spray and/or vapor suppressant/cover with plastic sheeting	For all VOC contaminated stockpiles for periods of inactivity greater than 1 hour.
Water spray and/or vapor suppressant and place soil in sealed containers within 15 minutes, or load into trucks, moisten with water, cover, and transport off-site.	If VOC concentration of excavated soil is measured at greater than 1000 ppm.

#### **5.1.2 Vapor Monitoring**

Monitoring will be conducted using a portable organic vapor monitor. Monitoring of the excavation or remediation areas, and soils, will be conducted in conformance with SCAQMD Rule 1166. Perimeter monitoring will also be conducted.

## **5.2 DUST MITIGATION**

A Dust Management Plan has been prepared as a component of the CMP. The Dust Management contains an evaluation of risks posed by particulates, and mitigation and monitoring measures.



## **6.0 AREAS OF CONCERN AND ASSOCIATED CONTAMINANTS**

### **6.1 UST LOCATIONS**

#### **6.1.1 Closed-in-Place USTs**

A cluster of four USTs was closed in place outside the eastern wall of the former facility in 1995. Tank 1 had a capacity of 12,000 gallons and had historically been used for the storage of gasoline or rolling oil, Tanks 2 and 3 had capacities of 20,000 and 25,000 gallons respectively and were used for storage of rolling oil. Tank 4 had a capacity of 30,000 gallons and was used for the storage of both diesel fuel and rolling oil. These tanks had been precision tested and found to be intact, but soil and groundwater in the vicinity of the tanks was found to be impacted by petroleum hydrocarbons, and attributed to overfilling of the tanks. A vapor recovery system was installed in the vicinity of these tanks, and confirmation sampling conducted at the conclusion of the vapor recovery system's operation showed continued residual petroleum concentrations under Tank 3. The LACDPW approved termination of the vapor recovery system in a November 5, 1993 letter, and closure of the tanks in a November 13, 1995 letter (Iris Environmental 2006). The area where these four USTs are located is noted as (1) on Figure 1.

These tanks will be removed during Site remediation. Soils in the vicinity of these closed tanks may contain residual TPH at concentrations exceeding Site-specific RBSLs. Impacted soils identified during tank removal activities will be excavated and stockpiled as generally described in Section 7.1 and sampled and analyzed for TPH to determine their suitability for on-site re-use, or if required, to profile for off-site disposal per Section 7.2. Confirmation samples will be collected from the floor and sidewalls of the excavated area and analyzed for TPH as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo), and VOCs using USEPA Method 8015 modified, to confirm that residual soils are below the Site-specific Cleanup Goals established in the CMP.

#### **6.1.2 Closed-in-Place Sumps**

In 1993, the former facility operator reported the abandonment/closure of two non-fuel USTs or sumps to LACDPW. One of the tanks was configured with two compartments with a total capacity of 5,000 gallons, and the other had a 6,500 gallon capacity. Both tanks contained rolling oil. Soil samples taken from a depth of 4 feet below the tank bottoms showed TPH concentrations as high as 41,000 milligrams per kilogram (mg/kg), ethylbenzene was detected at a maximum concentration of 770 micrograms per kilogram (µg/kg), PCE at a maximum concentration of 190 µg/kg, toluene at a maximum

concentration of 840 µg/kg, and xylenes at a maximum concentration of 3,500 µg/kg (Iris Environmental 2006). These former tanks are designated as (2) on Figure 1.

Soils in the vicinity of these closed sumps have been identified for remediation by excavation and off-site disposal. Impacted soils will be excavated and stockpiled as generally described in Section 7.1, and sampled for off-site disposal per Section 7.2. Confirmation samples will be collected from the floor and sidewalls of the excavated area and analyzed for TPH as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) using USEPA Method 8015 modified, and VOCs using USEPA Method 8260, to confirm that residual soils are below the Site-specific Cleanup Goals established in the CMP.

### **6.1.3 Big Bliss Cold Mill Process Sump**

The Big Bliss cold mill process sump was utilized to store rolling oil. In April 2004, the facility operator reported to the RWQCB that, based on samples collected from underground sumps and monitoring wells at the Site, it appeared that this process sump may have been leaking rolling oil (Iris Environmental 2006). The Big Bliss cold mill process sump is designated as (3) on Figure 1.

Accessible soils saturated with rolling oil in the vicinity of this sump have been identified for remediation by excavation and off-site disposal. Impacted soils will be excavated and stockpiled as generally described in Section 7.1, and sampled for off-site disposal per Section 7.2. Confirmation samples will be collected from the bottom and sidewalls of the excavated area and analyzed for TPH as gasoline (TPHg), diesel (TPH-d), and motor oil (TPH-mo) using USEPA Method 8015 modified, and VOCs using USEPA Method 8260, to confirm that residual soils are below the Site-specific Cleanup Goals established in the CMP.

### **6.1.4 Process Sumps Permitted as USTs**

Three process sumps that were permitted as USTs will be removed under the terms and conditions of a closure permit issued by LACDPW on April 26, 2007. These tanks contained rolling oil with capacities of 9,000 gallons (Tank 1) and 2,000 gallons (Tanks 2 and 3). The closure permit specifies sampling locations and required analyses for completing closure of these tanks. Although leaks from these particular sumps have not been documented, there is the potential that soils in the vicinity have been affected by rolling oil (Iris 2006). These process sumps are designated as 4a, 4b, and 4c on Figure 1.

## **6.2 SOILS UNDERLYING SITE BUILDING SLAB AND PAVED AREAS**

Based on a review of extensive Site characterization data, soils in the vicinity of two borings (SB-14 and SB-17 in Figure 1) have been identified for remediation by excavation and off-site disposal. Impacted soils will be excavated and stockpiled as generally described in Section 7.1, and sampled for off-site disposal per Section 7.2. Confirmation samples will be taken from the bottom and sidewalls of the excavated area and analyzed for TPH as gasoline (TPH-g), diesel (TPH-d), and motor oil (TPH-mo) using USEPA Method 8015 Modified, and VOCs using USEPA Method 8260, to confirm that residual soils are below the Cleanup Goals established in the CMP.

Numerous investigations have identified the presence of isolated areas of contamination under the building slab and paved areas of the Site. As with all areas at the Site, odorous or visibly contaminated/stained soils will be isolated and sampled as per the guidelines described in Section 7 (Iris Environmental 2007).

## **6.3 ASBESTOS AND LEAD PAINT**

Asbestos containing materials and lead paint have each been identified at various locations at the Site buildings and may potentially be associated with existing on-site subsurface utilities (ERM 2006). Hazardous materials abatement activities preceded facility building decommissioning. If insulated utilities are encountered, the general contractor will follow the guidelines described in Section 7.

## **7.0 GUIDELINES FOR IDENTIFICATION AND ANALYSIS OF EXPECTED AND UNKNOWN ENVIRONMENTAL CONDITIONS**

### **7.1 IDENTIFICATION AND STOCKPILING OF EXPECTED AND UNKNOWN ENVIRONMENTAL CONDITIONS IN SOILS**

During periods in which excavation and mass grading occur, the general contractor should continually evaluate the character of excavated soil and excavated sidewall to check for visible (or odorous) signs of soil contamination. Such observation should occur in areas outlined in Section 6.1 where impacts are known to exist, as well as other potentially unknown environmental conditions. Such assessments typically utilize several measures as indicators for the presence of contamination:

- Oily, shiny, or chemical-saturated soil;
- Soil with chemical or hydrocarbon-like odor;
- Significantly discolored soil that reasonably indicates the presence of contamination;
- Underground structures such as tanks, vaults, or sumps.
- Once an environmental impact has been identified by general contractor personnel the following steps will be undertaken:
  - Excavation and mass grading activities in the area (an approximate 25 foot buffer zone around discovery) suspected to contain contaminated soil should be stopped. Soils that have been recently excavated and/or relocated from the vicinity should be located and visually assessed.
  - The region(s) of suspected contaminated soil should be cordoned off with yellow CAUTION tape to prevent unauthorized Site personnel from accessing the area. If unidentified and/or irritant odors (including nuisance odors) are present, working areas immediately downwind of suspected contaminated soils should be relocated.
  - If the contaminated soils are adjacent, or nearby, storm drain inlets, drainage ditches, creeks, or surface water bodies, temporary storm water retention controls, such as jute rolls or sorbent booms, should be placed between soils and aquatic receptors.

- To the degree safe and practicable, suspected contaminated soils should be covered with visqueen plastic. Relocated soil stockpiles should be placed on top of visqueen plastic.

Prior to, or concurrent with, interim actions, the appropriate notifications will be made to the developer via telephone.

## **7.2 SAMPLING**

The environmental professional will collect four-point composite samples from stockpiled soils, and discrete samples from excavation sidewalls and floors. Excavation sidewall and floor samples will be collected as confirmation sampling to demonstrate that left-in-place soils are below contaminant screening levels as presented in the CMP. Stockpile samples will be collected to assist with off-site soil disposal. Stockpile sampling density will be determined in consultation with specific landfill or recycling facilities, but is expected to be one four-point sample for every 100 cubic yards of stockpiled soils up to 1,000 cubic yards. For stockpiles greater than 1,000 cubic yards, one four-point composite sample will be collected for every 250 to 500 cubic yards of stockpiled soils.

## **7.3 LABORATORY ANALYSIS**

A California state-certified laboratory will perform chemical analyses on soil samples collected for testing during the development of the Site. The following suite of analyses are expected to provide coverage for potential on-site contaminants: TPH as gasoline (TPH<sub>g</sub>), diesel (TPH<sub>d</sub>), and motor oil (TPH<sub>mo</sub>); and VOCs including fuel-related benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. Testing for additional contaminants can be considered by the environmental professional based on Site observations. Laboratory analysis of stockpile samples utilized for off-site soil disposal may be analyzed for additional contaminants as required in consultation with specific landfill or recycling facilities.

## **7.4 ENVIRONMENTAL CONTAMINANT SCREENING LEVELS**

The lead regulatory agency for the Site is DTSC, and as required by the DTSC, a CMP for the Site has been developed. As presented in the CMP, contaminant screening levels for the Site include PRGs (Commercial Worker), CHHSLs (Commercial Worker) and calculated Site-specific RBSLs for TPH<sub>g</sub>, TPH<sub>d</sub> and TPH-rolling oil. Potential exceptions to this protocol occur where compounds (e.g. arsenic) are present above PRGs, but are within the generally accepted background concentrations for the region. Additional agency notification would be initiated if unknown areas of impact with

contaminant levels exceeding screening levels (presented in the CMP) are encountered. The point of contact at the DTSC is listed in Section 7.5. With the concurrence and approval of the DTSC, Site-specific modeling and analysis could be performed to demonstrate that residual contaminants above screening level criteria could remain in place without adverse health impacts.

## **7.5 AGENCY NOTIFICATION**

The DTSC contact for this project is:

- Mr. Nebu John  
5796 Corporate Avenue  
Cypress, CA 90630  
(714) 484-5745

## **7.6 CONTAMINATED SOIL DISPOSAL**

Soils that are assessed to have contaminant concentrations that exceed the Site screening levels must be further profiled for off-site disposal or recycling (as non-hazardous waste, non-Resource Conservation Recovery Act (RCRA) hazardous waste, or RCRA hazardous waste). Soils with contaminant concentrations that exceed Site screening levels, but are lower than hazardous waste thresholds in accordance with the California Code of Regulations, Title 22 (Title 22), will either be disposed in a licensed California Class II or III landfill facility, or evaluated for recycling with a potential off-site third party. In soils with detections of contaminants above the hazardous waste thresholds in accordance with Title 22, certain constituents (e.g. metals) may require supplemental leachability testing (i.e. Waste Extraction Test [WET] and/or Toxic Characteristic Leaching Procedure [TCLP]) to evaluate potential off-site disposal options. Soils failing the WET test would result in characterization as California hazardous waste. Soils failing the TCLP would result in characterization as RCRA hazardous waste. Soils that are assessed to be hazardous waste under Federal or California regulations will be manifested and transported by a hazardous waste licensed transporter. The developer will provide proper hazardous waste manifest signatures. These materials will be disposed of in an appropriate hazardous waste landfill.

## **7.7 HEALTH AND SAFETY PLAN GUIDELINES**

Typical Health and Safety plans will be expected to contain the general requirements presented in Appendix B.

## 8.0 REFERENCES

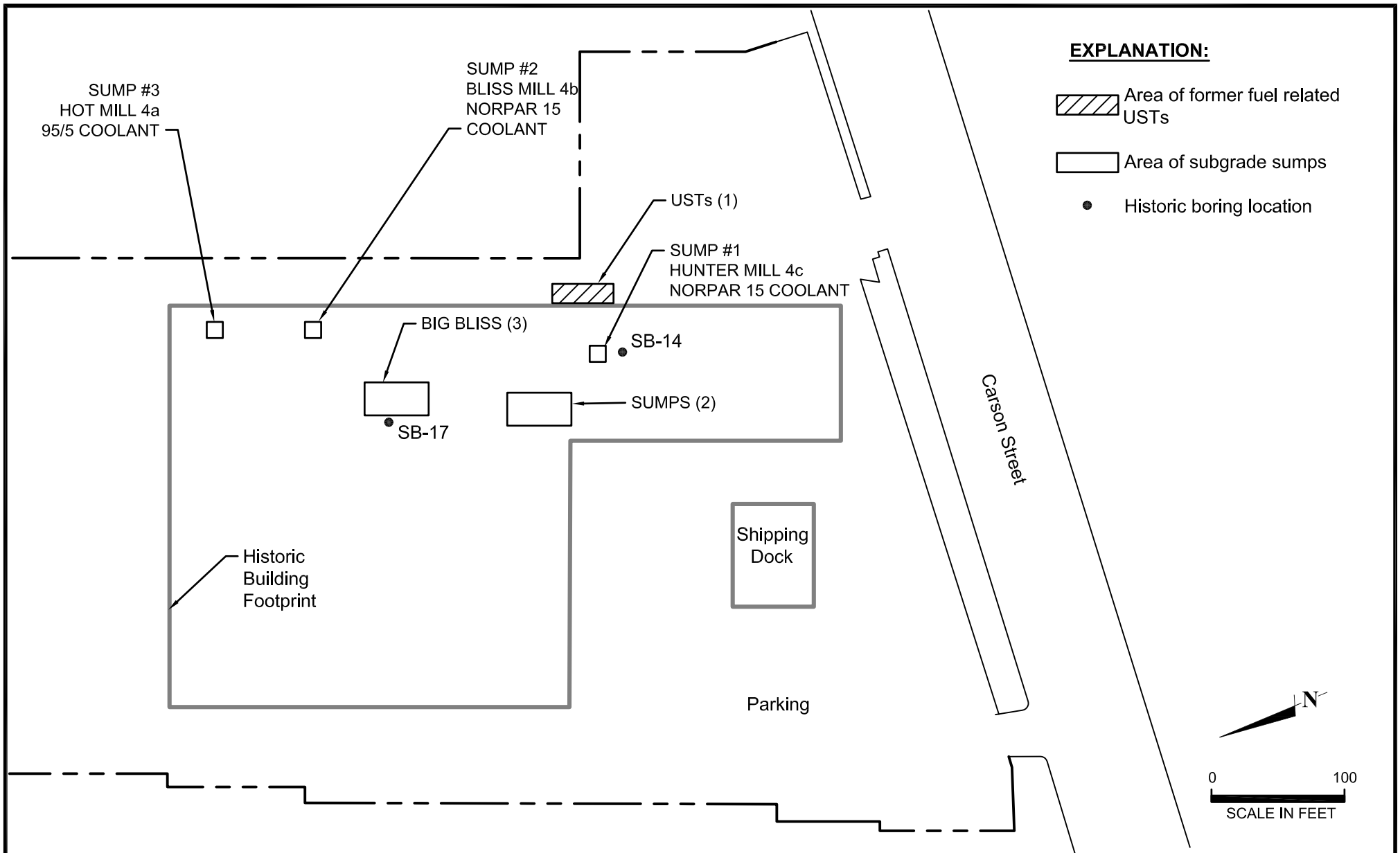
Environmental Resources Management (ERM). 2006. *Facility Closure Plan*. June 7.

Iris Environmental (Iris). 2006. *Phase I Environmental Site Assessment, Commonwealth Aluminum Concast, Inc., 2211 and 2241 East Carson Street, Carson, California*. November 20.

Iris. 2007. *Site Remediation and Redevelopment Plan, Former Carson Aleris Facility, 2211 and 2241 East Carson Street, Carson, California*. February 5.

## **FIGURES**





**TABLE 1**  
**SOIL SCREENING CRITERIA**

**TABLE 1: SUMMARY OF CHEMICAL DETECTIONS IN SOIL**  
**CARSON / ALERIS**  
**Site Remediation and Redevelopment Plan**  
**Carson, California**

Analytical Group	Chemical Name	Detection Frequency	Range of Detected Concentrations	Mean Concentration	95 % UCL Concentration <sup>1</sup>	Soil PRG <sup>2</sup> (Commercial Worker)	Soil CHHSL <sup>3</sup> (Commercial Worker)	Exceeds Screening Level <sup>4</sup>	Units
<b>Inorganics</b>									
	Aluminum	57/57	16-72000	16,402	25,023	1.0E+05	NA	No	mg/kg
	Arsenic	63/82	2.1-9.9	3.78	4.20	2.5E-01	2.4E-01	Yes	mg/kg
	Barium	78/78	43-270	129	138	6.7E+04	6.3E+04	No	mg/kg
	Beryllium	14/78	0.5-3.6	0.386	0.467	1.9E+03	1.7E+03	No	mg/kg
	Cadmium	46/87	0.51-125	3.47	12.8	4.5E+02	9.9E+02 <sup>a</sup>	No	mg/kg
	Chloride	10/10	62-3005	805	1,926	NA	NA	NA	mg/kg
	Chromium	78/78	7.4-210	26.8	42.1	4.5E+02 <sup>b</sup>	2.6E+02 <sup>b</sup>	No	mg/kg
	Cobalt	78/78	3.2-200	17.5	32.5	1.9E+03	3.2E+03	No	mg/kg
	Copper	191/193	0.3-10825	372	869	4.1E+04	3.8E+04	No	mg/kg
	Cyanide (total)	7/10	0.08-0.98	0.281	0.719	1.2E+04	NA	No	mg/kg
	Lead	187/190	2-645	49.4	89.0	8.0E+02	3.5E+03	No <sup>c</sup>	mg/kg
	Mercury	65/78	0.021-0.23	0.1	0.0846	3.1E+02	1.8E+02	No	mg/kg
	Molybdenum	17/78	2-30	2.23	4.08	5.1E+03	4.8E+03	No	mg/kg
	Nickel	78/78	6.2-500	27.1	56.9	2.0E+04	1.6E+04	No	mg/kg
	Selenium	1/78	2.1	1.19	1.29	5.1E+03	4.8E+03	No	mg/kg
	Silver	2/78	1.3-4.8	0.639	0.74	5.1E+03	4.8E+03	No	mg/kg
	Sulfate	10/10	16-184	95.1	123	NA	NA	NA	mg/kg
	Sulfide (total)	0/10	ND	ND	ND	NA	NA	NA	mg/kg
	Vanadium	78/78	15-76	38.8	41.0	1.0E+03	6.7E+03	No	mg/kg
	Zinc	190/190	1.1-7825	449	891	1.0E+05	1.0E+05	No	mg/kg
<b>TPH</b>									
	TEPH (C8-C40)	51/100	5.6-49000	1,982	9,722	5.2E+04 <sup>c</sup>	5.2E+04 <sup>c</sup>	No	mg/kg
	TPH (diesel)	7/17	25-3400	621	1,824	3.7E+04 <sup>c</sup>	3.7E+04 <sup>c</sup>	No	mg/kg
	TPH (extractable - rolling oil)	18/36	11-19701	1,591	8,389	5.2E+04 <sup>c</sup>	5.2E+04 <sup>c</sup>	No	mg/kg
	TPH (gasoline)	12/20	0.12-2800	483	1,381	2.7E+04 <sup>d</sup>	2.7E+04 <sup>d</sup>	No	mg/kg
	TRPH	4/5	27-310	89.0	459	5.2E+04 <sup>c</sup>	5.2E+04 <sup>c</sup>	No	mg/kg
	TVPH (C6-C12)	30/97	0.54-41000	1,924	3,671	2.7E+04 <sup>d</sup>	2.7E+04 <sup>d</sup>	Yes	mg/kg
<b>VOC</b>									
	1,1,1-Trichloroethane	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,1,2,2-Tetrachloroethane	1/94	0.002	0.0224	0.113	9.3E-01	NA	No	mg/kg
	1,1,2-Trichloroethane	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,1-Dichloroethane	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,1-Dichloroethylene	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,2,4-Trimethylbenzene	14/81	0.002-290	3.61	39.2	1.7E+02	NA	Yes	mg/kg
	1,2-Dichlorobenzene	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	1,2-Dichloroethane (EDC)	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,2-Dichloropropane	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	1,3,5-Trimethylbenzene	11/81	0.0021-96	1.20	8.60	7.0E+01	NA	Yes	mg/kg
	1,3-Dichlorobenzene	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	1,4-Dichlorobenzene	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	2-Chloroethylvinyl ether	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	4-Isopropyltoluene	4/81	0.002-4.8	0.0609	0.431	2.0E+03	NA	No	mg/kg
	Benzene	2/33	0.61-0.74	0.0623	0.344	1.4E+00	NA	No	mg/kg
	Bromodichloromethane	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Bromoform	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	Bromomethane	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	Carbon Tetrachloride	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Chlorobenzene	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	Chloroethane	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	Chloroform	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Chloromethane	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	cis-1,2-Dichloroethylene	0/20	ND	ND	ND	NA	NA	NA	mg/kg
	cis-1,3-Dichloropropylene	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Dibromochloromethane	0/13	ND	ND	ND	NA	NA	NA	mg/kg
	Dichlorodifluoromethane (R12)	0/20	ND	ND	ND	NA	NA	NA	mg/kg
	Ethylbenzene	20/124	0.0037-34	0.831	4.52	4.0E+02	NA	No	mg/kg
	Isopropylbenzene	9/81	0.002-9.4	0.120	0.844	2.0E+03	NA	No	mg/kg
	Methylene Chloride	1/114	0.11	0.187	1.25	2.1E+01	NA	No	mg/kg
	Naphthalene	10/81	0.0058-69	0.861	6.18	4.2E+00	NA	Yes	mg/kg
	n-Butylbenzene	1/81	52	0.646	4.65	2.4E+02	NA	No	mg/kg
	n-Propylbenzene	8/81	0.0034-43	0.535	3.85	2.4E+02	NA	No	mg/kg
	sec-Butylbenzene	4/81	0.0056-0.067	0.0647	0.438	2.2E+02	NA	No	mg/kg
	Tetrachloroethylene (PCE)	12/124	0.0026-0.19	0.0291	0.128	1.3E+00	NA	No	mg/kg
	Toluene	17/124	0.021-11	0.191	1.12	5.2E+02	NA	No	mg/kg
	Total Xylenes	31/124	0.0022-220	5.61	32.2	4.2E+02	NA	No	mg/kg

**TABLE 1: SUMMARY OF CHEMICAL DETECTIONS IN SOIL**

**CARSON / ALERIS**

**Site Remediation and Redevelopment Plan**

**Carson, California**

Analytical Group	Chemical Name	Detection Frequency	Range of Detected Concentrations	Mean Concentration	95 % UCL Concentration <sup>1</sup>	Soil PRG <sup>2</sup> (Commercial Worker)	Soil CHHSL <sup>3</sup> (Commercial Worker)	Exceeds Screening Level <sup>4</sup>	Units
	trans-1,2-Dichloroethylene	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	trans-1,3-Dichloropropylene	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Trichloroethylene (TCE)	1/114	0.0022	0.0228	0.129	1.1E-01	NA	No	mg/kg
<b>VOC</b>									
	Trichlorofluoromethane (R11)	0/33	ND	ND	ND	NA	NA	NA	mg/kg
	Vinyl chloride	0/33	ND	ND	ND	NA	NA	NA	mg/kg

**Notes:**

<sup>1</sup>Corresponds to the 95% Upper Confidence Level (UCL) of the arithmetic mean calculated using ProUCL version 3.00.02

and assuming that chemicals reported as non-detect (ND) are present at one-half the method detection limit as recommended by the USEPA (1989).

The maximum detected value of the primary and field duplicate sample analytical results included in the calculations.

If both values were ND, the minimum detection limit was included in the calculations.

<sup>2</sup> US EPA Region IX Preliminary Remediation Goals (2004). October Available at <http://www.epa.gov/region09/waste/sfund/prg/files/04prgtable.pdf>

<sup>3</sup> California Human Health Screening Level (CHHSL) commercial / industrial soil screening numbers from Cal/EPA (2004)*Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil*. Office of Environmental Health Hazard Assessment (OEHHA) Integrated Risk Assessment Section. November, revised January 2005.

<sup>4</sup> Consistent exceeds screening level if the maximum concentration detected at the Site is greater than a screening level for that constituent.

<sup>a</sup> Revised to reflect the Cal/EPA Department of Toxic Substances Control Human and Ecological Risk Division's current policy that cadmium is not considered as a carcinogen via the oral route. The revised screening value was calculated using methodology consistent with that used by Cal/EPA to calculate CHHSLs (Cal/EPA 2004), resulting in risk-based concentrations under a commercial setting of 1255 mg/kg for cancer risk and 990 mg/kg for noncancer hazard.

<sup>b</sup> Values for total chromium assumes a 1:6 ratio of hexavalent to trivalent chromium. CHHSLs for total chromium presented here are based on adjusted toxicity values for the 1:6 ratio assumption and calculated using the methodology for calculating soil risk-based screening levels presented in the CHHSLs document.

<sup>c</sup> Carcinogenic effects are evaluated using soil sampling data analyzed for VOCs. Noncancer effects are evaluated using the approach set forth by the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG, 1997) as discussed in Appendix D. Toxicity for TEPH and TRPH are assumed to be equivalent to TPH-rolling oil.

<sup>d</sup> Carcinogenic effects are evaluated using soil and soil gas sampling data analyzed for VOCs. Noncancer effects are evaluated using the approach set forth by the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG, 1997) as discussed in Appendix D. Toxicity for TVPH are assumed to be equivalent to TPH-gasoline.

<sup>e</sup> Although the maximum lead concentration does not exceed either the PRG or CHHSL values, it is above the health-based level of 340 mg/kg derived using the USEPA Adult Lead Model presented in the health risk evaluation in Appendix D. Note that only 2 samples (SB-10-3 and HA-2-1) exceed this health-based screening level and that these 2 samples are within the northwestern area of the Site that is subject to deed notification.

mg/kg = milligrams per kilogram.

NA = Not applicable, screening level not available.

ND = Not detected at or above the reporting limit for this compound.

TPH = Total petroleum hydrocarbons.

TEPH (C8-C40) = Total extractable petroleum hydrocarbons.

TRPH = Total residual petroleum hydrocarbons.

TVPH (C6-C12) = total volatile petroleum hydrocarbons.

VOC = Volatile organic compound.

**References:**

California Environmental Protection Agency (Cal/EPA). 2004.*Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil*. Office of Environmental Health Hazard Assessment (OEHHA) Integrated Risk Assessment Section. November, revised January 2005.

Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG). 1997.*Volume 4: Development of Fraction Specific Reference Doses (RfDs) and Reference Concentrations (RfCs) for Total Petroleum Hydrocarbons (TPH)*.

United States Environmental Protection Agency (1989).*Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part A). Interim Final*. Office of Emergency and Remedial Response. EPA 540/1 89/002. Washington, D.C. December.

**APPENDIX A**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE  
1166**

(Adopted August 5, 1988)(Amended July 14, 1995)(Amended May 11, 2001)

**RULE 1166. VOLATILE ORGANIC COMPOUND EMISSIONS FROM  
DECONTAMINATION OF SOIL**

(a) Applicability

This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

(b) Definitions

- (1) EXCAVATION is the process of digging out and removing materials, including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.
- (2) GRADING is the process of leveling off to produce a smooth surface including the removal of any material necessary to that process such as asphalt and concrete necessary to expose known VOC contaminated soil.
- (3) SOIL DECONTAMINATION MEASURE is any process approved by the Executive Officer to remediate, destroy, remove, or encapsulate VOC and VOC-contaminated soil.
- (4) UNDERGROUND STORAGE TANK means any one or combination of tanks, including pipes connected thereto, which is used for the storage of organic liquid which is more than 50% beneath the surface of the ground.
- (5) VOC CONTAMINATED SOIL is a soil which registers a concentration of 50 ppm or greater of Volatile Organic Compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.
- (6) VOC CONTAMINATED SOIL MITIGATION PLAN is a plan to minimize VOC emissions to the atmosphere during excavation and any subsequent handling of VOC-contaminated soil.

- (7) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds are defined in Rule 102—Definition Of Terms.
  - (8) VOLATILE ORGANIC MATERIALS include gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOC.
- (c) Requirements
- (1) A person excavating an underground storage tank and/or transfer piping storing or previously storing VOC materials, or excavating or grading soil containing VOC materials shall:
    - (A) Apply for, obtain and operate pursuant to a mitigation plan approved by the Executive Officer prior to commencement of excavation or handling. The mitigation plan general requirement and application requirements are found in Attachment A to this rule. A copy of the approved plan must be on site during the entire excavation period.
    - (B) Notify the Executive Officer at least 24 hours prior to excavation using a form approved by the Executive Officer which is fully completed.

If the excavation does not commence on start date, renotification is required.

An alternative notification procedure may be authorized for multiple excavations within a single facility, with prior written approval from the Executive Officer.
    - (C) Monitor for VOC contamination pursuant to subdivision (e), at least once every 15 minutes commencing at the beginning of excavation or grading and record all VOC concentration readings in a format approved by the Executive Officer; and
    - (D) When VOC-contaminated soil is detected during excavation or grading:
      - (i) Implement the approved mitigation plan (Attachment A).
      - (ii) Notify the Executive Officer within 24 hours of detection of VOC-contaminated soil.

- (iii) Monitor and record VOC concentration readings as prescribed in the plan. Monitoring records must be kept available on site.
  - (iv) Keep calibration records for all monitoring instruments available on site.
- (2) A person handling VOC-contaminated soil at or from an excavation or grading site shall:
  - (A) Segregate VOC-contaminated stockpiles from non-VOC contaminated stockpiles such that mixing of the stockpiles does not take place.
  - (B) Spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour.
  - (C) Conduct a daily visual inspection of all covered VOC contaminated soil stockpiles to ensure the integrity of the plastic covered surfaces. A daily inspection record must be maintained on site.
  - (D) Comply with the provisions in subparagraph (c) (1)(A) and clause (c)(1)(D)(i).
  - (E) Maintain a record of the identification and business addresses of the generator, transporter and storage/treatment facilities. Such record shall be signed by each party at the time custody is transferred.
  - (F) Treat or remove contaminated soil from an excavation or grading site within 30 days from the time of excavation.
- (3) If the VOC concentration in the excavated soil is measured at greater than 1000 ppm, spray the soil with water or vapor suppressant and:
  - (A) As soon as possible, but not more than 15 minutes, place the soil in sealed containers, or
  - (B) As soon as possible, but not more than 15 minutes, load into trucks, moisten with additional water, cover and transport off site, or
  - (C) Implement other alternative storage methods approved in writing by the Executive Officer.



- (4) A person treating VOC-contaminated soil shall:
  - (A) Obtain a permit to construct and operate treatment equipment, as applicable, from the Executive Officer, and
  - (B) Implement VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology applied during all segments, and which include, but are not limited to, at least one of the following:
    - (i) Installation and operation of an underground VOC collection system and a disposal system prior to excavation.
    - (ii) Collection and disposal of the VOC from the excavated soil on-site using equipment approved by the Executive Officer.
    - (iii) Any equivalent VOC-contaminated soil control measure previously approved in writing by the Executive Officer.
- (5) A person shall not engage in or allow any on-site or off-site spreading, grading or screening of VOC-contaminated soil, which results in uncontrolled evaporation of VOC to the atmosphere.
- (6) Loading trucks for contaminated soil must meet the following:
  - (A) The truck and trailer shall be adequately tarped prior to leaving the site; no excavated materials shall extend above the sides or rear of the truck or trailer to prevent soil spillage during transport, and
  - (B) The exterior of the truck, trailer and tires shall be cleaned off prior to the truck leaving the site.
- (d) Exemptions
  - (1) The provisions of this rule shall not apply to the following:
    - (A) Excavation, handling, and treating of less than one (1) cubic yard of contaminated soil.
    - (B) Removal of soil for sampling purposes.
    - (C) Accidental spillage of five (5) gallons or less of VOC containing material.

- (2) The provisions of paragraphs (c)(1) and (c)(2) shall not apply to soil excavation or handling as a result of an emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer. Whenever possible, the Executive Officer shall be notified by telephone prior to commencing such excavation. The Executive Officer shall be notified in writing no later than 48 hours following such excavation. Written notification shall include written emergency declaration from the authorized officer.
- (e) Test Methods
  - (1) A person shall measure excavated soils for volatile organic compounds to determine contamination by:
    - (A) Using an organic vapor analyzer calibrated with hexane, complying with 40 CFR Part 60 Appendix A, EPA Reference Method 21 Section 3 or any equivalent method with prior approval in writing by the Executive Officer. If other calibrating gases are used, then the measured readings shall be correlated to and expressed as hexane.
    - (B) Placing the probe inlet at a distance of no more than three inches from the surface of the excavated soil and while slowly moving the probe across the soil surface, observe the instrument readout. If an increased meter reading is observed, continue to sample the excavated soil until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately double the instrument response time. If the maximum observed meter reading is greater than the 50 ppm standard in the regulation, record and report the results.
  - (2) The presence of VOC in stored or spillage materials shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in Headspace] and/or Method 304 (Determination of Volatile Organic Compounds in Various Materials) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(f) Enforcement

- (1) Violation of any provision of this rule or the violation of the approved mitigation plan shall be grounds for the Executive Officer to amend or revoke the mitigation plan, in addition to penalties provided by the Health & Safety Code.
- (2) If the owner or operator is served with a Notice of Violation for creating a public nuisance, the owner or operator shall suspend operation until the public nuisance is mitigated to the satisfaction of the Executive Officer.

ATTACHMENT A  
GENERAL MITIGATION PLANS REQUIREMENTS

VOC Contaminated Soil Mitigation Plans shall be written to minimize VOC emissions to the atmosphere during excavation, grading, handling and treatment of VOC contaminated soil. VOC Contaminated Soil Mitigation Plans shall consist of three types: Various Locations, Site Specific and Facility Treatment.

- (1) General Requirements
  - (A) A plan is not transferable.
  - (B) A person responsible for the excavation, grading or handling of VOC contaminated soil must be completely familiar with the plan and must adhere to the plan requirement. The Executive Officer may require that the plan be signed by the owner and/or operator.
  - (C) A plan may be amended upon renewal.
  - (D) Permission to excavate, grade or handle VOC contaminated soil may be withdrawn by the District upon a finding by the Executive Officer that the excavation, grading or handling of the VOC contaminated soil is causing a public nuisance or violating other AQMD rules or regulations.
- (2) Various Location Plans:
  - (A) Shall be limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site.
  - (B) Shall not be used in conjunction with any other various location plan at the same site within a consecutive 12-month period.
  - (C) Shall expire after one year from issuance unless renewed.
  - (D) Shall not be issued for nor used for operations that involve grading, soil treatment or remediation, or landfills.
- (3) Site Specific Plans:
  - (A) Shall be for excavation of greater than 2000 cubic yards of VOC contaminated soil.
  - (B) Shall be issued for specific excavation or grading locations for a period not to exceed two years.
  - (C) Shall not be renewable.

- (4) Facility Treatment Plans:
  - (A) Shall be issued for a treatment facility at a permanent location.
  - (B) Shall expire after one year from issuance unless renewed.
- (5) Applications for Site Specific Plans shall contain as a minimum:
  - (A) Reasons for excavation or grading.
  - (B) Cause of VOC soil contamination and history of the site.
  - (C) Description of tanks or piping associated with the soil contamination.
  - (D) An estimate of the amount of contaminated soil.
  - (E) The operating schedule for excavation and removal.
  - (F) Description of how the excavation or grading will be conducted.
  - (G) Description of mitigation measures for dust, odors and VOC.
  - (H) Details of disposal of VOC contaminated soil, including the ultimate receptor.
  - (I) Description of monitoring equipment and techniques.
  - (J) A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.
  - (K) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.
- (6) Applications for Facility Treatment Plans shall at a minimum:
  - (A) Include a list of all AQMD permits to construct or operate which have been issued for that treatment and control equipment.
  - (B) Provide for the implementation of VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology during all operations.
  - (C) Provide a map showing the facility layout including the location of all proposed VOC and non-VOC contaminated soil stockpiles.
  - (D) Specify the total amount of VOC contaminated soil proposed to be stockpiled on site.
  - (E) Provide for VOC contaminated soil stockpiles to be kept moist with water or suppressant and be covered to prevent fugitive emissions.

- (F) Provide for VOC contaminated soil stockpiles to be segregated from non-VOC contaminated soil stockpiles.
  - (G) Provide for maintenance of records for stockpiles according to the source name, address and dates of reception.
  - (H) Provide for records of the generator, transporter and storage/treatment facilities and indicate their identification and business addresses. Such records shall be signed by each party at the time custody is transferred.
  - (I) Provide a map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential area or other sensitive receptors such as hospitals, or locations where children or elderly people live or work.
  - (J) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.
  - (K) Specify the operating schedule and maximum amount of VOC-contaminated soil proposed to be remediated on a daily basis.
- (7) In approving a plan, the Executive Officer require reasonable conditions deemed necessary to ensure the operations comply with the plan and AQMD rules. The conditions may include, but shall not be limited to, procedures for ensuring responsibility for the implementation of the plan, accessibility to the site for AQMD staff, notification of actions required by the plan, identification of emission receptors, monitoring and testing, suppression and covering of stockpiles, prevention of public nuisance from VOC or dust emissions, prevention of fugitive emissions of VOC contaminated soil, loading of truck trailers, and disposal and treatment.
- (8) In approving a plan, the Executive Officer may require any records deemed necessary to be maintained by the operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the Executive officer upon request.

**APPENDIX B**

**PROJECT HEALTH AND SAFETY REQUIREMENTS**

## Environmental Health and Safety Plan

As documented in the CMP prepared for the former Commonwealth Aluminum Site located at 2211-2307 East Carson Street in Carson, California (Site) , chemicals of concern (COC) for the Site include VOCs at depths greater than 10 feet below ground surface (bgs), total volatile petroleum hydrocarbons (TVPH), and metals.

The remediation contractor will be responsible for developing and implementing an Environmental Health and Safety Plan (EHASP) for the Site. Elements of the plan must include all practices and procedures necessary to comply with all new and existing Federal, California, and local statutes, ordinances, or regulations regarding health and safety.

Specific components of the EHASP must include the following;

- Identification of Site hazards
- Assignment of specific health and safety responsibilities for Site work
- Establishment of appropriate general work practices
- Establishment of control zones and decontamination procedures
- Job hazard analysis / hazard mitigation procedures
- Air monitoring
- Required personal protective and related safety equipment
- Contingency and Emergency information

An EHASP has been prepared by the remediation contractor and is included in the CMP as Appendix I.



**DUST MONITORING PLAN  
SOIL EXCAVATION ACTIVITIES**

**FORMER COMMONWEALTH ALUMINUM FACILITY**

**2211 – 2307 East Carson Street  
Carson, California**

*Prepared for:*

ProLogis Exchange CA (7) LLC  
4041 MacArthur Blvd., Suite 400  
Newport Beach, CA

*Prepared by:*

Iris Environmental  
1438 Webster Street, Suite 302  
Oakland, CA

Contract No. 06-467-K  
November 8, 2007

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>2.0 BACKGROUND INFORMATION .....</b>	<b>2</b>
<b>2.1 Site Description and Location.....</b>	<b>2</b>
<b>2.2 Site History and Background.....</b>	<b>2</b>
<b>3.0 SCAQMD RULE 403 REQUIREMENTS .....</b>	<b>4</b>
<b>3.1 Oversight.....</b>	<b>4</b>
<b>3.2 Dust Control Measures.....</b>	<b>5</b>
<b>4.0 SITE-SPECIFIC COMMUNITY HEALTH AIR QUALITY MONITORING ACTION LEVELS .....</b>	<b>6</b>
<b>5.0 SITE-SPECIFIC COMMUNITY HEALTH AIR QUALITY MONITORING PROGRAM IMPLEMENTATION .....</b>	<b>7</b>
<b>5.1 Equipment .....</b>	<b>7</b>
<b>5.2 Measurement Frequency and Locations.....</b>	<b>7</b>
<b>5.3 Mitigation Measures .....</b>	<b>8</b>
<b>5.4 Recordkeeping.....</b>	<b>8</b>

## **ATTACHMENTS**

<b>Attachment A</b>	<b>South Coast Air Quality Management District Rule 403</b>
<b>Attachment B</b>	<b>Non-volatile COPC-Specific Action Level Derivation</b>

## 1.0 INTRODUCTION

This Dust Monitoring Plan (DMP) describes air monitoring for particulate matter (fugitive dust) at the former Commonwealth Aluminum/Aleris Facility located at 2211-2307 East Carson Street in Carson, California (Site). Air monitoring will be conducted during soil remediation activities described in the Corrective Measures Proposal described in Section 2 below to address impacted soil at the Site, and during post-demolition Site redevelopment activities. The dust monitoring activities will be conducted to:

- Comply with the South Coast Air Quality Management District (SCAQMD) Rule 403 as amended 3 June 2005; and
- Protect community health.

The entities selected by Prologis Exchange CA (7) LLC (ProLogis), owner and developer of the Site, to perform remediation and redevelopment (hereinafter the “contractors”) will each be responsible for providing a site-specific Health and Safety Plan (HSP) to protect workers against exposure to airborne dust and chemical hazards, as well as physical hazards. This DMP does not address personnel breathing-zone air quality monitoring; rather, it has been developed to establish the minimum required data collection efforts at the Site perimeter to control off-site exposures of airborne constituents to area residents, adjacent populations, and the general public.

This DMP has been developed as an integrated part of the CMP prepared for the Site. Specifically, this DMP includes descriptions of:

- Requirements of SCAQMD Rule 403
- Action levels for the protection of community health
- Dust monitoring procedures to meet SCAQMD Rule 403 requirements and to protect community health
- Dust mitigation actions
- Recordkeeping activities

A copy of SCAQMD Rule 403 is presented in Attachment A.

## **2.0 BACKGROUND INFORMATION**

The following sections describe the Site and its general surroundings and provide a brief summary of Site history and background.

### **2.1 Site Description and Location**

The Site is located at 2211-2307 East Carson Street in the city of Carson, Los Angeles County, California (Figures 1 and 2 of the CMP). The Site occupies approximately 22 acres in an area that is primarily commercial/industrial. The Site is bounded by East Carson Street on the south, railroad tracks to the north, and commercial and industrial buildings to the east and west. Interstate 405 is located about ½ mile to the south. The Site is generally flat with a gentle slope to the west of less than 0.1%. A chain link fence extends around the perimeter of the Site.

### **2.2 Site History and Background**

The Site consists of two parcels as shown on Figure 3 of the CMP. A review of historical aerial photographs and topographic maps indicates that the western portion of the Site has been developed and used as an industrial facility since at least 1947. Owners/operators of the Site have included Apex Smelting Company, Alflex Corporation, and Barmet Aluminum Corporation. The Site is currently owned by ProLogis which purchased the Site on December 11, 2006. Former Site operations consisted of aluminum scrap recycling and a rolling process that fabricated various aluminum products for resale, administrative activities, raw material storage, secondary aluminum smelting, foundry, casting, hot rolling, coating, warehousing, and shipping.

A gravel pit was excavated on the northeastern portion of the Site during World War II, and this pit was used as a landfill from approximately 1947 through 1961. The landfill was commonly referred to as the California By-Products landfill. Materials managed in the landfill included primarily inert materials, such as clean earth, rock, sand, and gravel, paving fragments, concrete, brick, plaster, dry mud cake from oil field sumps, and waste rock wool and rock wool shot, along with small quantities of rotary mud and other wastes incident to oil well drilling operations and tank bottoms derived from storage of crude oil. Mixtures of cement and asbestos were also accepted at the landfill. The landfill was closed in 1960 and is currently paved and used by an adjacent operator as a truck trailer storage area.

Numerous soil and groundwater investigations have been conducted at the Site, and have shown that soils and groundwater have been impacted by prior manufacturing activities. The results of previous Site investigations are summarized in the CMP.

The Regional Water Quality Control Board, Los Angeles Region (RWQCB) formerly provided regulatory oversight for the Site under the Spill, Leaks, Investigations, and Cleanup (SLIC) program (SLIC No. 0772) until June 27, 2007, when regulatory oversight was transferred to the State of California, Department of Toxic Substances Control (DTSC).

As required by the Agreement for Facility-Initiated Corrective Action between DTSC and ProLogis (Agreement), ProLogis is submitting a Corrective Measures Proposal (CMP) to DTSC to describe proposed Site remediation activities. This dust monitoring plan is a component of the proposed remediation activities (also referred to as corrective measures) outlined in the Site-specific CMP.

### **3.0 SCAQMD RULE 403 REQUIREMENTS**

The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to the soil remediation activities since excavating and backfilling can generate fugitive dust. For the purposes of complying with Rule 403, the proposed activities at the Site are not considered to be “large operations”, defined under this Rule as any active operations on a property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) or more three times during the most recent 365-day period. Thus, as outlined in Rule 403, the proposed on-Site activities shall comply with Table 1 of Rule 403 (included as Attachment A) which outlines best available fugitive dust control measures applicable to all construction activity sources.

Pursuant to Table 1 of Rule 403, the following measures will be implemented to meet the Rule 403 requirements:

- Conduct observations for visible dust
- Prevent dust from remaining visible in the atmosphere beyond the fence line of the Site
- Minimize dust generation by using best available control measures
- Mitigate visible fugitive dust, if detected.

The SCAQMD Rule 403 (d) (3) states that no person shall cause or allow PM10 (particulate matter less than 10 microns in diameter) levels to exceed 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) when measured over a 5-hour period. The PM10 levels are determined by evaluating the difference between upwind and downwind samples measured over a 5-hour period. At its discretion, SCAQMD may conduct particulate sampling at any site where fugitive dust emissions are suspected.

#### **3.1 Oversight**

In general, the approach to Rule 403 monitoring will be to implement routine dust control measures identified as best available control measures in Table 1 of Rule 403. These measures are summarized in Section 3.2 (Dust Control Measures) below. Remediation and post-demolition redevelopment contractors will be responsible for implementing dust control

measures on a daily basis. Iris Environmental will oversee the measures taken to ensure that Rule 403 is implemented as required by the Rule. To this end, Iris Environmental will be present, as required, to observe soil excavation and other post-demolition redevelopment activities and to conduct air monitoring and recordkeeping activities. Iris Environmental will immediately notify the contractor if any of the Rule 403 requirements are violated. In particular, Iris Environmental will monitor to determine if visible dust emissions extend beyond the fence line of the Site or the total dust concentration is above the applicable action level established to meet the PM10 level requirement stated above. In these cases, the contractor will be responsible for implementing additional mitigation measures necessary to attain compliance with Rule 403 requirements.

### **3.2 Dust Control Measures**

As described in Table 1 of Rule 403 (included as Attachment A), the best available control measures that could be implemented during remediation and post-demolition redevelopment activities to control fugitive dust include:

- Pre-apply water to depth of proposed cuts.
- Re-apply water as necessary to maintain soils in a damp condition to ensure that visible emissions do not exceed 100 feet in any direction. An odor suppressant may also be used that acts as an additional control agent for fugitive dust generation.

If visible dust is observed or applicable total dust action levels are exceeded, the excavation contractor will implement additional dust control mitigation measures as summarized in Table 1 of Rule 403 (included as Attachment A). Possible measures include increasing dust control measures until no visible dust is observed and/or total dust concentrations are below the applicable action level. If additional watering is conducted and is ineffective or cannot be implemented satisfactorily (e.g., with no runoff or discharge from the Site), then these operations will be discontinued and alternative dust suppression measures could be implemented.



## **4.0 SITE-SPECIFIC COMMUNITY HEALTH AIR QUALITY MONITORING ACTION LEVELS**

Based on the results of the health risk evaluation (included as Appendix D of the CMP), non-volatile chemicals of potential concern (COPCs) considered the primary COPCs in airborne dust for remediation and during redevelopment activities at the Site include Total Extractable Petroleum Hydrocarbons (TEPH), aluminum, cobalt, and copper. These non-volatile COPCs may be bound to dust particles originating at the Site during excavation or grading activities during Site remediation and post-demolition redevelopment. During soil excavation and grading activities, ambient air monitoring will be implemented to:

- Monitor potential on-Site impacts to ambient air from the excavation and grading activities
- Monitor potential off-Site (community) impacts
- Assess whether mitigation measures are necessary to protect community health

The perimeter action level for nuisance dust monitoring specified in Rule 403 is 0.05 mg/m<sup>3</sup> (equivalent to 50 µg/m<sup>3</sup>) greater than the measured upwind background level based on a 5-hour time weighted average. To ensure that measured fugitive dust concentrations are considered protective for the community during on-Site soil excavation and post-demolition redevelopment activities, COPC-specific perimeter total dust action levels were developed and compared to the Rule 403 dust action level of 0.05 mg/m<sup>3</sup> to assess whether setting a perimeter dust action level equivalent to the Rule 403 dust action level of 0.05 mg/m<sup>3</sup> would be protective of the adjacent community. The derivation of COPC-specific perimeter total dust action levels is provided in Attachment B.

As indicated in Table B-5 of Attachment B, the lowest derived COPC-specific perimeter total dust action level was for aluminum of 0.099 mg/m<sup>3</sup> (99 µg/m<sup>3</sup>). Thus, aluminum was considered to be an indicator COPC for evaluating Site perimeter dust monitoring action levels. The COPC-specific perimeter total dust action level for aluminum is greater than the Rule 403 dust action level of 0.05 mg/m<sup>3</sup>. Therefore, setting the perimeter dust action level at the Rule 403 dust action level of 0.05 mg/m<sup>3</sup> is considered to provide adequate protection for the surrounding community from non-volatile COPCs originating from the Site during Site excavation activities.

## **5.0 SITE-SPECIFIC COMMUNITY HEALTH AIR QUALITY MONITORING PROGRAM IMPLEMENTATION**

This section covers procedures for collecting air quality data and describes mitigation measures to be implemented if the applicable action level is exceeded at the Site. Equipment needs, calibration requirements, data collection frequency and locations, mitigation measures to be implemented when the applicable action level is exceeded, and record keeping are addressed.

### **5.1 Equipment**

A MIE Personal DataRAM (or equivalent) will be used for monitoring total dust to be used to assess the Site perimeter and worker action levels. The DataRAM is a portable real time particulate monitor with a concentration measurement range of 0.001 milligrams per meter (mg/m<sup>3</sup>) to 400 mg/m<sup>3</sup> at an accuracy of  $\pm 5\%$ . This instrument has a particulate size range of maximum response of 0.1 to 10 microns. The calibration performed by the DataRAM manufacturer will be verified using a certified calibration bag at the beginning of each workday in accordance with the procedures specified by the manufacturer. Calibration logs will be maintained for each day.

A Novalynx Model 110-WS-16 modular weather station (or equivalent) will be used to record wind speed, wind direction, temperature, relative humidity, and barometric pressure. The weather station can record wind speeds from 0 to 99.9 mph with an accuracy of  $\pm 3\%$ . The weather station will be set up in a location near the remedial excavation area where interference from structures or trees will be minimal.

### **5.2 Measurement Frequency and Locations**

Measurements will be taken throughout the workday, as described in the following sections, when the subject remedial excavation and materials management activities are being conducted.

Dust level measurement frequency for Site perimeters will be every 15 minutes during the subject work activities. The 5-hour time weighted average (TWA5) dust concentration will be recorded by the DataRAMs.

Measurement locations at Site perimeters will be based on prevailing wind direction with monitoring points established within 5 to 15 degrees of the measured upwind/downwind direction. Monitoring locations may be moved throughout the day based on wind direction. Perimeter monitoring locations include:

- One upwind location just inside the property boundary (fence line) at the further upwind direction, and

- One downwind location just inside the property boundary (fence line) at the further downwind direction.

### **5.3 Mitigation Measures**

If visible dust emissions extend beyond the fence line of the Site or if the Site fugitive dust applicable action level (Rule 403 nuisance action level of  $50 \mu\text{g}/\text{m}^3$ ) is exceeded, the mitigation measures described below will be implemented:

- If visible dust emissions extend beyond the Site fence line, dust control measures will be increased until no visible dust is observed. If additional watering is conducted and is ineffective or cannot be implemented satisfactorily (e.g., with no runoff or discharge from the Site), then these operations will be discontinued and alternative dust suppression measures may be implemented.
- If the difference in the TWA5 total dust readings between the upwind and downwind fence line locations is greater than the  $50 \mu\text{g}/\text{m}^3$  Rule 403 nuisance action level, excavation activities will be stopped and dust suppression activities will be conducted until the TWA5 fugitive dust readings are less than the action level.

### **5.4 Recordkeeping**

The SCAQMD does not require record keeping on sites that do not contain large operations defined by Rule 403. However, Iris Environmental personnel will take field notes to document the observed field activities. Furthermore, the instruments used for air monitoring will be calibrated at the beginning of each workday and the time and name of field personnel will be recorded. In addition, weather conditions at the Site will be recorded each day. Measurements will be documented for each reading at each designated monitoring location.

The following information will be recorded for each instrument reading:

- Date and time of reading
- Reading location (e.g., upwind, downwind)
- Reading zone (e.g., upwind, downwind)
- Concentration reading

**ATTACHMENT A**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**RULE 403**

**ATTACHMENT B**

**NON-VOLATIVE COPC-SPECIFIC ACTION LEVEL DERIVATION**

## **ATTACHMENT B**

### **NON-VOLATIVE COPC-SPECIFIC ACTION LEVEL DERIVATION**

To ensure that measured fugitive dust concentrations are considered protective for the community during on-Site soil excavation and post-demolition redevelopment activities, perimeter total dust action levels were developed for the primary non-volatile chemicals of potential concern (COPCs) identified in the health risk evaluation and compared to the Rule 403 dust action level of  $0.05 \text{ mg/m}^3$  to assess whether setting a perimeter dust action level equivalent to the Rule 403 dust action level of  $0.05 \text{ mg/m}^3$  would be to be protective of the adjacent community. The non-volatile COPCs for which COPC-specific perimeter total dust action levels were developed are summarized in Table B-1.

The COPC-specific perimeter total dust action levels are dust equivalent concentrations derived using chemical-specific action levels and the maximum measured COPC concentrations in on-Site soils. Chemical-specific action levels are the maximum allowable air concentrations of COPCs off-Site residential and commercial receptors may be exposed to without exceeding the relevant risk level, incorporating the assumption of the duration of Site redevelopment activities. In accordance with the CalEPA and USEPA risk assessment guidance (CalEPA 1994, USEPA 1989), the relevant risk levels are  $1 \times 10^{-6}$  risk for carcinogenic compounds, and a hazard index (HI) of one for non-carcinogenic compounds.

To ensure that the chemical-specific action levels are protective of off-Site resident and commercial populations, Iris Environmental developed the action levels using standard residential and commercial exposure assumptions, with modifications to the breathing rate for the offsite resident to account for the 8-hour exposure time (i.e., construction activities are assumed to occur during an 8 hour workday). To calculate the chemical-specific action levels for each COPC, Iris Environmental used the standard formula for the calculation of human health risk (CalEPA 1994, USEPA 1989). The specific equations and assumptions used in calculating the chemical-specific action levels are presented in Tables B-2 through B-4. The chemical-specific and total dust action levels for each non-volatile COPC are summarized in Table B-5.

(Adopted May 7, 1976) (Amended November 6, 1992)  
(Amended July 9, 1993) (Amended February 14, 1997)  
(Amended December 11, 1998)(Amended April 2, 2004)  
(Amended June 3, 2005)

## **RULE 403. FUGITIVE DUST**

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

- (1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.
- (2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.
- (3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.
- (4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.
- (5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

- (6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.
- (7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.
- (8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.
- (9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.
- (10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.
- (11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.
- (12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.
- (13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or



produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

- (14) **DISTURBED SURFACE AREA** means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:
  - (A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;
  - (B) been paved or otherwise covered by a permanent structure; or
  - (C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.
- (15) **DUST SUPPRESSANTS** are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.
- (16) **EARTH-MOVING ACTIVITIES** means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.
- (17) **DUST CONTROL SUPERVISOR** means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.
- (18) **FUGITIVE DUST** means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.
- (19) **HIGH WIND CONDITIONS** means that instantaneous wind speeds exceed 25 miles per hour.
- (20) **INACTIVE DISTURBED SURFACE AREA** means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.
- (21) **LARGE OPERATIONS** means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

- (22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.
- (23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.
- (24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.
- (25) PM<sub>10</sub> means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.
- (26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.
- (27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.
- (28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.
- (29) SIMULTANEOUS SAMPLING means the operation of two PM<sub>10</sub> samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.
- (30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

- (31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.
  - (32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.
  - (34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.
  - (35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.
  - (37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.
- (d) Requirements
- (1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

- (A) the dust remains visible in the atmosphere beyond the property line of the emission source; or
  - (B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.
- (2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.
- (3) No person shall cause or allow PM<sub>10</sub> levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM<sub>10</sub> monitoring. If sampling is conducted, samplers shall be:
  - (A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM<sub>10</sub>.
  - (B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.
- (4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.
- (5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.
  - (A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

- (B) Pave the surface extending at least 100 feet and at least 20 feet wide.
  - (C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - (D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - (E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).
- (6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.
- (e) Additional Requirements for Large Operations
- (1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:
    - (A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;
    - (B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;
    - (C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

- (D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;
  - (E) identify a dust control supervisor that:
    - (i) is employed by or contracted with the property owner or developer;
    - (ii) is on the site or available on-site within 30 minutes during working hours;
    - (iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;
    - (iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and
  - (F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).
- (2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).
- (f) **Compliance Schedule**  
The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

- (A) Dairy farms.
- (B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.
- (C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.
- (D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:
  - (i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;
  - (ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and
  - (iii) makes the completed self-monitoring form available to the Executive Officer upon request.
- (E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:
  - (i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and
  - (ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and
  - (iii) makes the completed self-monitoring form available to the Executive Officer upon request.

- (F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.
  - (G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.
  - (H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.
  - (I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.
  - (J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:
    - (i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and
    - (ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.
  - (K) sandblasting operations.
- (2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:
- (A) When wind gusts exceed 25 miles per hour, provided that:



- (i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;
    - (ii) records are maintained in accordance with subparagraph (e)(1)(C).
  - (B) To unpaved roads, provided such roads:
    - (i) are used solely for the maintenance of wind-generating equipment; or
    - (ii) are unpaved public alleys as defined in Rule 1186; or
    - (iii) are service roads that meet all of the following criteria:
      - (a) are less than 50 feet in width at all points along the road;
      - (b) are within 25 feet of the property line; and
      - (c) have a traffic volume less than 20 vehicle-trips per day.
  - (C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.
- (3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.
  - (4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:
    - (A) Blasting operations which have been permitted by the California Division of Industrial Safety; and
    - (B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.
  - (5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

- (6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.
- (7) The provisions of subdivision (e) shall not apply to:
  - (A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.
  - (B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.
  - (C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.
- (8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM<sub>10</sub> pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

<b>Source Category</b>	<b>Control Measure</b>	<b>Guidance</b>
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

<b>Source Category</b>	<b>Control Measure</b>	<b>Guidance</b>
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exits
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

<b>Source Category</b>	<b>Control Measure</b>	<b>Guidance</b>
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	



**Table 2**  
**DUST CONTROL MEASURES FOR LARGE OPERATIONS**

<b>FUGITIVE DUST SOURCE CATEGORY</b>	<b>CONTROL ACTIONS</b>
<b>Earth-moving (except construction cutting and filling areas, and mining operations)</b>	<p>(1a) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations;  OR</p> <p>(1a-1) For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.</p>
<b>Earth-moving: Construction fill areas:</b>	<p>(1b) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.</p>

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS
<b>Earth-moving: Construction cut areas and mining operations:</b>	(1c) Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
<b>Disturbed surface areas (except completed grading areas)</b>	(2a/b) Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
<b>Disturbed surface areas: Completed grading areas</b>	(2c) Apply chemical stabilizers within five working days of grading completion; OR  (2d) Take actions (3a) or (3c) specified for inactive disturbed surface areas.
<b>Inactive disturbed surface areas</b>	(3a) Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR (3b) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (3c) Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR (3d) Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS
<b>Unpaved Roads</b>	<p>(4a) Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR</p> <p>(4b) Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR</p> <p>(4c) Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.</p>
<b>Open storage piles</b>	<p>(5a) Apply chemical stabilizers; OR</p> <p>(5b) Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR</p> <p>(5c) Install temporary coverings; OR</p> <p>(5d) Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.</p>
<b>All Categories</b>	<p>(6a) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.</p>

**TABLE 3**  
**CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

<b>FUGITIVE DUST SOURCE CATEGORY</b>	<b>CONTROL MEASURES</b>
<b>Earth-moving</b>	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
<b>Disturbed surface areas</b>	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
<b>Unpaved roads</b>	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
<b>Open storage piles</b>	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
<b>Paved road track-out</b>	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
<b>All Categories</b>	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

**Table 4**  
**(Conservation Management Practices for Confined Animal Facilities)**

<b>SOURCE CATEGORY</b>	<b>CONSERVATION MANAGEMENT PRACTICES</b>
<b>Manure Handling</b>  <b>(Only applicable to Commercial Poultry Ranches)</b>	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
<b>Feedstock Handling</b>	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
<b>Disturbed Surfaces</b>	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
<b>Unpaved Roads</b>	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
<b>Equipment Parking Areas</b>	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

**TABLE B-1: NON-VOLATILE CHEMICALS OF POTENTIAL CONCERN**  
**Former Commonweath Aluminum Facility**  
**Carson, California**

**Metals**

Aluminum

Cobalt

Nickel

**Total Petroleum Hydrocarbons**

TEPH

**Notes:**

TEPH = Total Extractable Petroleum Hydrocarbons

**TABLE B-2: CALCULATION OF ACTION LEVELS FOR  
NON-VOLATILE CHEMICALS OF POTENTIAL CONCERN  
Former Commonwealth Aluminum Facility  
Carson, California**

**Cancer Endpoint**

$$AL_{ca} = \frac{\text{Target Risk Level}^a}{\text{Intake Factor}^a \times \text{CSF}^b} \times 10^3 \mu\text{g/mg}$$

**Noncancer Endpoint**

$$AL_{nc} = \frac{\text{RfD (mg/kg day)}^c \times \text{Target Hazard Index}^a}{\text{Intake Factor}^b} \times 10^3 \mu\text{g/mg}$$

**Notes:**

AL: Action Level ( $\mu\text{g/m}^3$ )

<sup>a</sup> Target risk levels are  $1 \times 10^{-6}$  for residential and commercial exposure. Target hazard index is 1 for both residential and commercial exposure.

<sup>b</sup> The intake factor calculate using the standard formula below:

$$\text{Intake Factor} = \frac{\text{Inhalation Rate} \times \text{Exposure Frequency} \times \text{Exposure Duration}}{\text{Body Weight} \times \text{Averaging Time}}$$

Values for these terms are presented in Table A-3. Source for formula: United States Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response. EPA/540/1-89/002.

<sup>c</sup> Toxicity values (i.e. cancer slope factor [CSF] and reference dose [RfD]) are presented in Table A-4.

**TABLE B-3: EXPOSURE ASSUMPTIONS**  
**Former Commonwealth Aluminum Facility**  
**Carson, California**

Parameter	Offsite Resident Adult	Offsite Resident Child	Offsite Commercial Worker	Source
<u>Inhalation of Vapors</u>				
Inhalation Rate (m <sup>3</sup> /day) <sup>a</sup>	6.7	3.3	20	Scenario specific assumption
<u>Population-Specific Assumptions</u>				
Exposure Frequency (days/yr)	250	250	250	Scenario specific assumption
Exposure Duration (years)	1	1	1	Scenario specific assumption
Body Weight (kg)	70	15	70	Cal/EPA 1992
Averaging Time-Carcinogenic (days)	25550	25550	25550	USEPA 1989
Averaging Time-Noncarcinogenic (days)	365	365	365	Cal/EPA 1992

**Notes:**

<sup>a</sup> Breathing rate of 20 m<sup>3</sup>/day and 10 m<sup>3</sup>/day for adult and child resident (Cal/EPA 1992), respectively, for the inhalation exposure has been adjusted for 8 hour per day exposure from Site (e.g. 20 m<sup>3</sup>/day x [8 hours/day / 24 hours/day]).

**Source:**

California Environmental Protection Agency (Cal/EPA). 1992. *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities*. July.  
 United States Environmental Protection Agency (USEPA). 1989. *Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part A)*. Office of Emergency and Remedial Response. EPA/540/1-89/002.



**TABLE B-4: TOXICITY VALUES FOR NON-VOLATILE CHEMICALS OF POTENTIAL CONCERN**  
**Former Commonwealth Aluminum Facility**  
**Carson, California**

Chemical	Cancer Slope Factor (CSF) (mg/kg-d) <sup>-1</sup>		Chronic Noncancer Reference Dose (RfD) <sup>a</sup> mg/kg-day	
	Inhalation	Source	Inhalation	Source
<b>Metals</b>				
Aluminum	NC	NA	1.4E-03	USEPA 2004
Cobalt	9.8E+00	USEPA 2004	5.7E-06	USEPA 2004
Nickel	9.1E-01	Cal/EPA 2007	1.4E-05	Cal/EPA 2007
<b>Total Petroleum Hydrocarbons</b>				
TEPH	NC	NA	9.4E-02	b

**Notes:**

TEPH = Total Extractable Petroleum Hydrocarbons

TVPH = Total Volatile Petroleum Hydrocarbons

NC - Not considered to be a carcinogen.

NA - Not applicable

<sup>a</sup> Chronic noncancer RfDs have been used though they are overly conservative given the short-term exposures associated with dust/emission generating activities.

<sup>b</sup> RfD developed using Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG 1997) methodology and Human and Ecological Risk Division (HERD 2007) recommended fraction-specific RfD values.

**Sources:**

California Environmental Protection Agency (Cal/EPA). 2007. Toxicity Criteria Database. Maintained online at [www.oehha.org](http://www.oehha.org) by Office of Environmental Health Hazard Assessment (OEHHA).

United States Environmental Protection Agency (USEPA) 2004. Provisional Peer Reviewed Toxicity Values (PPRTV) as cited in the USEPA Region 9's Preliminary Remediation Goals Tables. Maintained online at <http://www.epa.gov/region09/waste/sfund/prg/index.html> by the USEPA.

**TABLE B-5: ACTION LEVELS FOR CHEMICALS OF CONCERN**  
**Former Commonwealth Aluminum Facility**  
**Carson, California**

Chemical	Cancer Endpoint Action Level			Noncancer Endpoint Action Level			Final Action Level	Maximum Detected Concentration (mg/kg)	Dust Action Level	Units
	Offsite Resident Adult	Offsite Resident Child	Offsite Commercial Worker	Offsite Resident Adult	Offsite Resident Child	Offsite Commercial Worker				
<b>Metals</b>										
Aluminum	NA	NA	NA	21	9.2	7.2	7.2	72000	99	µg/m <sup>3</sup>
Cobalt	0.11	0.047	0.037	0.087	0.037	0.029	0.029	200	146	µg/m <sup>3</sup>
Nickel	1.2	0.51	0.39	0.21	0.092	0.072	0.072	500	143	µg/m <sup>3</sup>
<b>Total Petroleum Hydrocarbons</b>										
TEPH	NA	NA	NA	1444	619	481	481	49000	9820	µg/m <sup>3</sup>

**Notes:**

TEPH = Total Extractable Petroleum Hydrocarbons

NA - Not applicable.

µg/m<sup>3</sup> = micrograms per cubic meter

mg/kg = milligrams per kilogram

**TRANSPORTATION PLAN**  
**FORMER COMMONWEALTH ALUMINUM FACILITY**  
**2211 - 2307 EAST CARSON STREET**  
**CARSON, CALIFORNIA**

*Prepared for:*

ProLogis Exchange CA (7) LLC  
4041 MacArthur Blvd., Suite 400  
Newport Beach, CA 92660

*Prepared by:*

Iris Environmental  
1438 Webster Street, Suite 302  
Oakland, California 93612

November 8, 2007  
Project No. 06-467-K

## TABLE OF CONTENTS

<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. BACKGROUND .....</b>	<b>4</b>
<b>3. PURPOSE .....</b>	<b>5</b>
<b>4. CHARACTERISTICS OF WASTE/MATERIAL TO BE TRANSPORTED .....</b>	<b>6</b>
<b>5. DESTINATION OF SOIL AND CONCRETE MATERIAL .....</b>	<b>7</b>
<b>6. TRANSPORTATION MODE .....</b>	<b>8</b>
6.1 Transporter and Driver Qualifications .....	8
<b>7. TRAFFIC ROUTES .....</b>	<b>9</b>
<b>8. TRAFFIC CONTROL AND LOADING PROCEDURES .....</b>	<b>10</b>
8.1 Dust and Odor Control During Transportation .....	10
8.2 Noise Management .....	10
8.3 Traffic .....	10
8.4 Loading Procedures .....	10
8.5 Truck Decontamination .....	11
<b>9. RECORD KEEPING .....</b>	<b>12</b>
<b>10. HEALTH AND SAFETY .....</b>	<b>13</b>
10.1 Training Requirements .....	13
10.2 40-Hour Health and Safety Training .....	13
10.3 8-hour Annual Refresher Training .....	13
10.4 8-Hour Supervisor Training .....	13
10.5 Communication Requirements .....	13
10.6 Personnel Responsibilities .....	14
10.7 Documentation Requirements .....	14
<b>11. CONTINGENCIES AND SAFEGUARDS TO BE ESTABLISHED FOR SOIL TRANSPORTATION .....</b>	<b>15</b>
11.1 Remediation Contractor/Transportation Contractor Responsibilities .....	15
11.2 Transportation Contractor Responsibilities .....	15
11.3 Driver Responsibilities .....	16
11.4 Responsibilities of Jobsite Contractor .....	17
<b>12.0 TRANSPORTATION ROUTE NOTIFICATION LIST OF EMERGENCY SERVICE ORGANIZATIONS .....</b>	<b>18</b>

## **1. INTRODUCTION**

This Transportation Plan describes how soil or contaminated concrete and debris removed during the implementation of the Corrective Measures Proposal (CMP) for the remediation of the Former Commonwealth Aluminum/Aleris Facility located at 2211-2307 East Carson Street in Carson, California (Site), will be managed during transportation to selected offsite disposal facilities. The Transportation Plan was prepared in order to comply with the May 1994 Interim Final Guidance for Preparation of Transportation Plans at Hazardous Substance Release Sites prepared by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The Transportation Plan provides the following information:

- A detailed description of route(s) to be followed by trucks transporting waste removed from the Site to the offsite treatment and/or disposal facilities selected for this project.
- Method(s) to cover loads of soil or contaminated debris in trucks prior to their departure to minimize the release of dust and vapors during transport.
- A list of emergency service organizations along the route(s) of transport which are to be notified, if required, prior to the shipment of hazardous soil/concrete/debris through their area of jurisdiction.
- A description of emergency response capabilities for accidental spillage or air release of dusts and vapors from the transport vehicles, including excavation and monitoring procedures.
- Prerequisites for transportation equipment and personnel to ensure compliance with transportation and safety regulations, and to ensure that personnel have been adequately trained to effectively respond to potential emergencies or accidental spills.
- A contingency plan for transportation personnel that outlines response procedures in the event of injury, exposure to contaminants, or accidental spillage.

## **2. BACKGROUND**

The Site is located at 2211-2307 East Carson Street in the City of Carson, Los Angeles County, California (Figure 1 of the CMP). The Site occupies approximately 22+ acres in an area that is primarily industrial. The Site is bounded by East Carson Street on the south, railroad tracks on the north, and industrial or commercial buildings on the west and east.

The Site consists of two parcels as shown on Figure 3 of the CMP. A review of historical aerial photographs and topographic maps indicates that the western portion of the Site has been developed and used as an industrial facility since at least 1947. Owners/operators of the Site have included Apex Smelting Company, Alfex Corporation, and Barmet Aluminum Corporation. The Site is currently owned by ProLogis Exchange CA (7) LLC (ProLogis). Former Site operations consisted of aluminum scrap recycling and a rolling process that fabricated various aluminum products for resale, administrative activities, raw material storage, secondary aluminum smelting, foundry, casting, hot rolling, coating, warehousing, and shipping.

A gravel pit was excavated on the northeastern portion of the Site during World War II, and this pit was used as a landfill from approximately 1947 through 1961. The landfill was commonly referred to as the California By-Products landfill. Materials managed in the landfill included primarily inert materials, such as clean earth, rock, sand, and gravel, paving fragments, concrete, brick, plaster, dry mud cake from oil field sumps, and waste rock wool and rock wool shot, along with small quantities of rotary mud and other wastes incident to oil well drilling operations and tank bottoms derived from storage of crude oil. Mixtures of cement and asbestos were also accepted at the landfill. The landfill was closed in 1960 and is currently paved and used by an adjacent operator as a truck trailer storage area.

Numerous soil and groundwater investigations have been conducted at the Site, and have shown that soils and groundwater have been impacted by prior manufacturing activities. These investigations are summarized in the CMP.

The chemicals of concern (COC) identified during the Site-wide investigations included total petroleum hydrocarbons (TPH), metals, and volatile organic compounds (VOCs) in soil, soil gas and groundwater. Analytical results of some soil samples indicated that, based on the risk-based cleanup criteria established for the Site in the CMP, some areas of soil will require excavation and offsite disposal. Portions of the former building slab and concrete substructures may also require management off-Site, if the concrete contains residual concentrations of COCs exceeding appropriate Site screening levels.

### **3. PURPOSE**

The purpose of this transportation plan is to minimize potential health, safety, and environmental risks resulting from the transportation of material and/or equipment during the proposed removal action.

#### **4. CHARACTERISTICS OF WASTE/MATERIAL TO BE TRANSPORTED**

The material to be removed and transported from the Site may include the following materials:

- Soils with TPH in the gasoline, diesel, and motor oil ranges (expected to be classified as non-hazardous wastes under State and Federal guidelines);
- COC-impacted waste debris (personal protective equipment [PPE], plastic lining, miscellaneous trash and debris);
- COC-impacted waste water derived from decontamination activities;
- Miscellaneous trash and debris;
- Concrete from building slab and subsurface structures with COC concentrations greater than Site-screening levels.



## **5. DESTINATION OF SOIL AND CONCRETE MATERIAL**

A licensed hazardous waste transporter will load and transport Site soils identified for off-site disposal and classified as hazardous waste to an appropriate treatment/storage and disposal facility (TSDF). The facility will be properly permitted to accept the type of waste it will be receiving. Material will be disposed of as follows:

- While not expected, all Extremely Hazardous and Toxic Substances Control Act (TSCA) waste types will be disposed at either the Kettleman Landfill, a Class I landfill operated by Waste Management located at 35251 Old Skyline Road, Kettleman City, California 93239 (559-386-9711) or the U.S. Ecology Landfill located at Highway 95 S, Beatty, Nevada 89003 (775) 553-2203
- All other Hazardous waste types (Resource Conservation and Recovery Act (RCRA) and California hazardous) will be disposed at the Kettleman Landfill, a Class I landfill operated by Waste Management. The landfill information is: 35251 Old Skyline Road, Kettleman City, California 93239 (559) 386-9711
- All Non-Hazardous waste types will be disposed at either the Kettleman Landfill or Azusa-BDC Special Waste Services Landfill operated by Waste Management. The Azusa landfill information is: 766 S. Ayon, Azusa, California 91702 (626) 969-1384.

## **6. TRANSPORTATION MODE**

The waste will be transported in trucks by an appropriately licensed transporter. Truck dump beds will be covered with tight fitting tarp type covers and securely fastened prior to the trucks leaving the Site. Each truck will be issued a waste manifest that must be signed by the receiving facility and returned to document proper disposal and weight.

The assumed daily loading is approximately 25 to 50 trucks per day or approximately 500 to 1000 tons per day assuming that each truck is capable of hauling approximately 20 tons per trip. Therefore, for example, if 5,000 tons of soil is excavated, it will require approximately 250 truck loads to transport the soil from the Site. Site remediation will occur over an expected 90 day period, with trucking occurring as needed to manage excavated, contaminated soils.

Scales will not likely be utilized, as most new trucks are equipped with gauges on each axle to measure approximate allowable loads. Each truckload will also carry at least a bill of lading, detailing the materials carried, weight, point of departure, and final destination.

### **6.1 Transporter and Driver Qualifications**

Transporters of waste classified as hazardous under State or Federal guidelines will be registered with the DTSC and the U.S. Environmental Protection Agency (EPA). The transporter will be registered with the Department of Motor Vehicles (DMV) and will have liability insurance. The transporter will be permitted to operate in the State of California and will have a current hazardous waste certified driver's license.

## **7. TRAFFIC ROUTES**

Trucks loaded with soil, concrete, or other contaminated debris will exit the project Site along East Carson Street then travel west approximately ½ mile to South Wilmington Avenue and then turn left to travel south approximately ½ mile to access Interstate 405 directly off of South Wilmington Avenue to travel highways to the appropriate landfills mentioned in Section 5 above for disposal.

For trucks heading to Kettleman Landfill, they will enter onto Interstate 5 Freeway north for 194 miles and exit State Route 41 and turn left. Travel on SR-41 south for 2.8 miles and turn right at Old Skyline Drive and the landfill is in 1.7 miles.

For trucks heading to U.S. Ecology landfill they will enter State Route 91 east for approximately 25 miles to Interstate 15 Freeway north for approximately 120 miles. Trucks will then turn left on CA State Route 127 north for 90 miles and continue on Nevada State Route 373 for 17 miles and turn left on US Highway 95 and arrive at the landfill.

Trucks heading to Azusa BDC Special Waste Services Landfill will enter onto Interstate 5 Freeway north for 9 miles and then take Interstate 605 Freeway north for 14 miles. Trucks will exit Live Oak Avenue towards Irwindale and merge onto Live Oak Avenue and continue on Arrow Highway for 1.6 miles. Trucks will turn left on Irwindale Avenue and travel for 0.3 miles, turn right on Ornelas Street and travel for 0.3 miles, and turn right on Ayon Avenue and arrive at the landfill.

Empty trucks to be loaded with soil or concrete will exit Interstate 405 and turn north onto South Wilmington Avenue. After traveling north for ½ mile, trucks will turn right onto East Carson Street and travel east for approximately ½ mile to enter the Site at the entrance on East Carson Street on the left hand (north) side of the street. This traffic route was selected to minimize the risk for potential exposure to surrounding communities.

## **8. TRAFFIC CONTROL AND LOADING PROCEDURES**

Site soil management practices will be implemented at the excavation and adjacent staging areas to prevent potential nuisance conditions from arising during soil/concrete transportation on public rights-of-way.

### **8.1 Dust and Odor Control During Transportation**

Although dust and odor control is not strictly a traffic issue, it is certainly a major concern for soil transport on public rights-of-way and through the community. If necessary, soils will be moisture conditioned to minimize dust generation before leaving the Site. If necessary, a foam agent such as Concover will be applied to eliminate odors and dust from the soils. Nonhazardous debris and soil will be placed in transport trucks equipped with visqueen bed liners, if necessary. All truck loads of soil/concrete and debris will be covered with a tarp before leaving the Site. The tarp covers will be secured and inspected by drivers prior to leaving the Site. In the event a tarp rips or comes loose during transit, the truck will stop at a safe location and the tarp will be repaired or replaced. If the tarp cannot be repaired, the truck will not be moved until a replacement tarp is obtained. Once tarp repair or replacement is completed, the truck will proceed on its designated transport route to the treatment and/or disposal facility.

### **8.2 Noise Management**

The traffic route selected and proposed for soil/concrete transport attempts to minimize exposure to hospitals, schools and other noise sensitive locations. The selected proposed traffic route has been selected to minimize noise impacts on residential neighborhoods.

### **8.3 Traffic**

If needed, routes may change during the day as traffic conditions change. It is anticipated that the work will occur between the hours of 6:00 a.m. and 5:00 p.m. If necessary, efforts will be made to avoid heavy truck traffic during peak traffic hours.

### **8.4 Loading Procedures**

Stockpiles will be loaded using an articulated front-end loader or similar piece of equipment onto appropriately licensed trucks. Dust generation will be minimized by spraying loads with water during dumping as necessary, slowly dumping each bucket load and minimizing the dumping height. Truck dump beds will be covered with tight fitting tarp type covers and securely fastened prior to the trucks leaving the Site. Any

loose soil that has fallen on to other areas of the trucks will be brushed off of the trucks prior to them leaving the Site. Each truck will be issued a waste manifest that must be signed by the receiving facility and returned to document proper disposal.

### **8.5 Truck Decontamination**

All equipment and trucks entering the impacted excavation will be inspected before leaving the Site. Vehicles requiring decontamination will be brushed off, or washed with water and detergent, in a washdown area constructed on Site, as warranted.

## **9. RECORD KEEPING**

ProLogis or ProLogis-appointed field personnel will maintain a list of the trucks leaving the Site and will record appropriate information for each load.

The following transportation documents must be carried with the driver when transporting the waste:

- Shipping documents (i.e. Manifests);
- Appropriate DOT placards; and
- Instructions including the route, emergency procedures and contacts for the transporter.

## **10. HEALTH AND SAFETY**

### **10.1 Training Requirements**

Personnel involved with the transportation of materials removed from the Site will not be permitted to participate in or supervise field activities until they have been trained to a level required by their job function and responsibility. Owners, employees, contractors, subcontractors, and Site visitors who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

### **10.2 40-Hour Health and Safety Training**

This basic course is required for all personnel working on-site, such as equipment operators, general laborers, electricians, plumbers, supervisors, management, etc., who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120 (e) (8).

### **10.3 8-hour Annual Refresher Training**

Personnel will be required to have current annual 8-hour Hazardous Waste Operations Refresher Training in accordance with 29 CFR 1910.120 (e) (8).

### **10.4 8-Hour Supervisor Training**

On-site management and supervisors directly responsible for, or who supervise, employees engaged in hazardous waste operations must have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120 (e) and 8 CCR 5192. This course includes, but is not limited to, elements appropriate to supervising hazardous waste related projects (e.g., accident reporting/investigation, regulatory compliance, work practice observations, auditing, emergency response procedures, etc.).

### **10.5 Communication Requirements**

All personnel involved in hazardous waste operations will be required to review the Site Health and Safety Plan (HASP) prepared by the contractor. In addition, a daily or weekly (depending upon activities) Health and Safety “tailgate” meeting will be held with all personnel involved in hazardous waste operations. The contractor-designated Site Safety Officer (SSO) will be responsible for enforcing the HASP.

A transportation coordinator will be identified along with procedures for notification of an accidental spill or truck breakdown during the transportation of any hazardous materials.

## **10.6 Personnel Responsibilities**

- Duties and responsibilities of the SSO include:
  - Ensuring that the specific provisions of the HASP are followed and work activities carried out according to the plan, including the use of proper PPE by Site workers;
  - Ensuring that all Site workers have met the project training and medical requirements;
  - Establishing adequate work area controls, such as exclusion zones and decontamination stations;
  - Ensuring that all measures stipulated by the HASP are employed to minimize the exposure of Site personnel and the neighboring community to the chemical hazards of the Site;
  - Interfacing with the community and passers-by, as necessary, to ensure they do not intrude on Site operations and remain outside of work control areas; and
  - Maintaining required documentation and a record of Site Health and Safety activities.

## **10.7 Documentation Requirements**

All personnel involved with the transportation of hazardous material at the Site will be required to provide proof of Health and Safety training commensurate with the requirement of their job function and responsibility.



## **11. CONTINGENCIES AND SAFEGUARDS TO BE ESTABLISHED FOR SOIL TRANSPORTATION**

The implementation of the Transportation Plan at the Site will be an integrated effort amongst the ProLogis project manager, remediation contractor, the transportation contractor, the job Site managers, and field personnel involved in the project. The organization and responsibilities for implementing safe working activities, and more specifically, the requirements contained in the Transportation Plan, are described below.

Prior to the start of soil transport operations, the transportation company personnel will be briefed on procedures for contacting the ProLogis project manager, and the remediation contractor in the event of a spill or incident during soil transport. The remediation contractor and/or transportation contractor will provide necessary emergency spill response measures, including cleanup and disposal of any spilled material.

The following paragraphs outline individual responsibilities of parties expected to be involved in this project.

### **11.1 Remediation Contractor/Transportation Contractor Responsibilities**

The following matters shall be the responsibility of the remediation contractor or the transportation contractor, depending on their respective contractual obligations:

- Upon notification that a spill has occurred, call the reporting party to obtain complete details regarding the incident. Enough information must be obtained to develop initial emergency response actions.
- Communications with the scene will be established.
- In the event of an emergency, respond to the scene as soon as possible after gathering information to gauge an appropriate response to the spill.

### **11.2 Transportation Contractor Responsibilities**

Adherence to the following conditions shall be the responsibility of the transporter firm contracted for the project:

- The contractor used to transport soil from the Site will be fully licensed and

permitted by the U.S. EPA and the required State(s).

- All Department of Transportation (DOT) safety regulations will be strictly followed. These include use of qualified drivers, written and road tests of drivers, medical evaluation, hours of service limitation, equipment standard and inspections, and operating procedures.
- The contractor will possess an EPA Transporters Identification Number.
- The contractor will maintain public liability and property damage insurance in an amount specified by ProLogis.
- The transportation contractor will be provided a copy of the HASP developed by the remediation contractor for the project. ProLogis will expect that the transportation contractor will adhere to conditions of the plan. ProLogis also expects that the transportation contractor will advise its drivers regarding the characteristics of the material being hauled, and corrective measures that must be taken in the event of an accident or exposure.
- The transportation contractor's vehicles, including trucks and trailers, must be equipped and maintained in accordance with the Federal Motor Carrier Safety Regulations (49 CFR Parts 393 and 396). These regulations specify minimum standards for equipment, including brakes, tires, lights, suspension, steering, emergency equipment and maintenance. Trucks will be equipped with radios.

### **11.3 Driver Responsibilities**

- In the event of an emergency, a driver's responsibilities are as follows:
  - Park the unit in the most secure area available, away from homes, traffic or businesses.
  - Never abandon the truck or disconnect the trailer unless told to do so by the proper authorities or unless there is an immediate danger which could affect the cargo.
  - Set out flares or reflectors.
  - Warn all persons to keep away (minimum distance 500 feet, actual distance to be determined by the DOT emergency response guidebook).
  - Protect manifest, paperwork, instruction materials, and equipment for later

use.

- Notify the Emergency Contact listed on the manifest, the ProLogis Project Manager, the driver's dispatcher, or supervisor, providing the following:
  - Proper shipping name, hazard class, and ID number of materials;
  - Exact location;
  - Quantity of material spilled;
  - Location and distance to any surface water;
  - Nature and extent of any injuries or property damage;
  - Weather conditions;
  - A telephone number where communications with the scene can be established; and
  - An estimate of what response and cleanup will be needed.
- Speak only to properly identified authorities. Do not speak to the media and refer them to the Site manager for any information.
- Stay at the scene until relieved.
- If the nature of the spill allows the driver, using appropriate PPE, to safely take action, he may attempt to dike the area, place a plastic liner down to collect the material or otherwise respond to the emergency. The driver is not to attempt to enter a closed unit or handle waste materials without qualified assistance.

#### **11.4 Responsibilities of Jobsite Contractor**

The project general contractor overseeing Site remediation will be responsible for assuring that the Transportation Plan prepared for the project is followed. The project general contractor will act as liaison between the Site and the transporter. The ProLogis Project Manager and/or the project general contractor will oversee the proper preparation of manifests to comply with applicable federal, state, and DOT regulations.

## **12.0 TRANSPORTATION ROUTE NOTIFICATION LIST OF EMERGENCY SERVICE ORGANIZATIONS**

<b>NAME</b>	<b>TELEPHONE NUMBER</b>
Los Angeles County Fire Department - Carson	(323) 830-9596
L.A. Co. Health Hazardous Material Division	(310) 534-6270
Emergency Services	911

Los Angeles County Sheriff's Department - Carson	(310) 830-1123
--	----------------

CalTrans-District 12-Orange County	949-724-2000
CalTrans-District 7-Los Angeles County	213-897-3656

CA Highway Patrol – LA Communications Center	(323) 906-2959
--	----------------

Chemtrec	(800) 424-9300
----------	----------------

U.S. National Response Center	(800) 424-8802
-------------------------------	----------------

## **REFERENCES**

California EPA, DTSC 1994. Transportation Plan Preparation Guidance for Site Remediation. Sacramento, California.